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**U.S. Department of Agriculture**

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**FOREST SERVICE**  
**EXPLANATORY NOTES**

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## THE ROLE OF THE FOREST SERVICE

The Forest Service holds the Federal responsibility for national leadership in "forestry." <sup>1/</sup> That role includes participation in setting national priorities, formulating programs, and establishing Federal policies that relate to man and his natural environment, especially the forest-related environment.

Forests and forest-related environment include forests, rangeland, grassland, brushland, alpine areas, lakes, ponds, and streams and wildlife habitats. Forestry is the protection and management of this land and water and their natural resources for the many purposes of mankind.

Forests provide raw materials for basic necessities of life, as well as natural environments for many leisure and educational activities. The Forest Service seeks to attain a harmonious relationship between man and his natural environment.

In 1974 Congress provided the vehicle to appraise and respond to the national situation more effectively when it approved the Forest and Rangeland Renewable Resources Planning Act. This is the second budget proposal submitted to meet the requirements of that new Act.

At the end of the 94th Congress the National Forest Management Act of 1976 and the Federal Land Policy and Management Act of 1976 were signed into law.

The National Forest Management Act builds on the strong statutory base of the Secretary of Agriculture in the administration of Forest Service programs. It expands and strengthens the direction of the Multiple Use-Sustained Yield Act of 1960 and the Forest and Rangeland Renewable Resources Planning Act of 1974. The Act expands the requirements for a Renewable Resource Assessment and Program; provides detailed direction on the preparation of land management plans including direction for public participation; provides additional direction on the review of Forest Service programs; provides new direction on reforestation; provides additional direction for the transportation system; and clarifies the status of the National Forest System. It also amends the Organic Act of 1897 to provide new timber sale authority, provides for increased payments to States, and transfers the functions of the National Forest Reservation Commission to the Secretary of Agriculture.

The Federal Land Policy and Management Act modifies a number of authorities relating to the administration of the National Forest System.

The Forest Service is developing procedures and regulations to implement these two Acts.

## WHAT THE FOREST SERVICE DOES

In carrying out its national forestry leadership role, the Forest Service undertakes a great variety of activities. The major tasks include administration of the National Forest System, cooperative State and private forestry programs, forestry research programs and human and community development programs (Figure 1). Following is a brief description of each of these major responsibilities:

### National Forest System

The Forest Service administers 188 million acres of Federal land in 44 States, Puerto Rico and the Virgin Islands. The National Forest System (hereafter called National Forests) is composed of 154 National Forests, 19 National Grasslands, and 16 Land Utilization Projects (Figure 2).

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<sup>1/</sup> This responsibility is delegated to the Chief of the Forest Service under Administrative Regulations of the U.S. Department of Agriculture (7 CFR 2.60).





They are operated under a multiple use land management concept designed to obtain sustained, long-term flows of goods and services. The various resource uses are harmonized and the relative public values of various possible resource uses are considered and management plans selected which best meet present and future needs of the American people. Activities are grouped in five areas of resource management.

Watersheds are managed to regulate streamflow, to control floods and erosion and to store water. Much of the Nation's water supply flows from the National Forests. Protection and improvement of the natural watersheds help to assure an adequate supply of pure water for the growing demands of agriculture, industry, and the American public.

Forage is managed to conserve the soil and vegetation while providing food and habitat for livestock and wildlife. Rangeland is also managed for its recreation, timber, and water resources.

Fish and wildlife habitat is managed to provide a healthy and productive place for native wildlife and fish species. A primary objective is to provide opportunities for sportsmen, bird and animal watchers, photographers and others to enjoy the fish and wildlife resources. Hunting and fishing in the National Forests are regulated by State laws, and projects for improving habitat are carried out cooperatively with State fish and game agencies.

Recreation management is designed to best serve the steadily increasing numbers of Americans seeking relaxation in the outdoors. Although much of the enjoyment offered the public is afforded by the natural environment of the forest itself, facilities are provided for a broad range of recreational activities, such as camping, picnicking, boating, swimming, and winter sports. In addition, 93 percent of the National Wilderness Preservation System is in National Forests.

Timber is managed to produce a continuous flow of wood products in perpetuity. This sustained-yield principle, implemented by modern forestry techniques, helps to assure adequate present and future crops of high-quality timber. The annual timber harvests from the National Forests depend on a variety of factors such as utilization standards, growth rates, value for other uses, and decisions on how best to use the present inventories over time.

These five resource management activities and many other purposes must be served by appropriate facilities and services. Roads and trails must be built and maintained; pipeline and utility rights-of-way must be granted; permits for special uses must be issued; mining claims must be approved; and boundaries must be surveyed and administered. All must be harmonized with other uses to maintain the quality of the environment. Finally, the National Forests must be protected from wildfire, harmful insects and diseases, law violators, and careless, wasteful users.

#### State and Private Forestry

Through cooperative programs with State and local governments, forest industries and private landowners, the Forest Service helps to protect and manage 726 million acres of forest and associated watershed land. Technical and financial assistance is offered to improve fire, insect and disease control; to develop multiple use management for optimum potential of forest resources; to improve harvesting, processing and marketing of forest products; and to stimulate reforestation and timber stand improvement. Major program areas are.

Cooperative Forest Fire Control. All 50 States participating in this program are responsible for the manpower, equipment and organization required. The Forest Service provides coordination, and financial and technical assistance, including training of fire control personnel, development of equipment and rapid availability of research information. The grant portion of this program is proposed to be reduced because: (1) the program has achieved its objective of encouraging States to establish forest fire protection organizations, and (2) these funds now serve primarily to replace State funds in the support of these organizations.



Cooperative Forest Pest Action. Forty-two States now participate in this program to prevent, detect and evaluate insect and disease damage. Federal cost-sharing and technical assistance are made available to these States to suppress forest insect and disease outbreaks where warranted. The program also includes pest control activities on Federal lands.

Cooperative Forest Management and General Forestry Assistance. Technical assistance to private forest landowners, forest operators and processors, and public agencies, are provided to develop forest resources to their maximum potential consistent with wise conservation practices.

Cooperative Tree Seedling. The Forest Service cooperates with all States and the Virgin Islands in establishing seed orchards and forest shelterbelt plantings on State and privately-owned land.

Cooperative Watershed Planning and Development Programs. Under these programs, the Forest Service carries out the forestry aspects of the Department of Agriculture's watershed protection, flood prevention, and resource conservation and development actions. Watershed restoration and resource development work on State and private forest lands is handled by the State forestry agencies through cooperative agreements. The forestry aspects of comprehensive resource and river basin planning are provided by Forest Service people or by State forestry agencies through cooperative agreements.

#### Forestry Research

The Forest Service carries on forestry research operation through eight regional experiment stations, the Forest Products Laboratory and the Institute of Tropical Forestry. Field and laboratory research is conducted at 71 locations throughout the United States. Outdoor laboratories in the form of 81 experimental forests and experimental ranges provide representative communities of plants and animals for manipulation and observation. The experimental stations solve regional natural resource problems, but much of their work has interregional, national and, often, international significance. Strong coordination and cooperation is emphasized among stations, with universities and other research organizations, and with land managers to solve urgent range and forest problems. The major areas of research are:

Forest and range management research which provides information on the establishment, improvement, and growth of trees, grasses, and other forest-related vegetation. This research also integrates recreation and esthetic objectives with multiple uses to improve livestock grazing management and wildlife and fish habitat.

Forest and range protection research studies ways of protecting forest resources from fire, insects, diseases, air pollution, and animal pests in ways that are not detrimental to forest ecosystems.

Forest products and engineering research provides new and more efficient processes for manufacturing wood products and systems for using wood products and for extending resource supplies. This research also develops new harvesting and transportation technology to support forest management and protection activities.

Forest resource economics research evaluates alternatives for utilizing and extending forest resources and improving marketing systems to lower costs. A continuing resource evaluation provides comprehensive information on the extent and condition of forest and rangeland and the outlook for future supplies and demands.

International forestry provides leadership, through cooperation and exchange, with forestry organizations and individuals of other countries.



### Human and Community Development Programs

The Forest Service participates in general cooperative manpower programs authorized by the Comprehensive Employment and Training Act of 1973 (87 Stat. 839) and the Youth Conservation Corps Act of 1971, as well as a number of programs for direct improvement of living conditions in communities and rural areas through technical forestry assistance.

Under the Comprehensive Employment and Training Act agreement, the Forest Service operates 17 Job Corps Civilian Conservation Centers to provide basic education and job training to disadvantaged youth. Other cooperative work training programs in which the Forest Service participates are Senior Community Services Employment Program (Older Americans), Neighborhood Youth Corps, College Work Study, and employment programs financed under CETA for which the Forest Service acts as host. The programs provide work and training to several thousand enrollees each year. In addition, the Forest Service is operating employment projects under Title X of the Public Works and Economic Development Act of 1965, in counties with a high unemployment rate. The Volunteers in the National Forests Act of 1972 provides for assistance in the protection and development of natural resources at nominal cost.

The Forest Service, in cooperation with the Department of the Interior, administers the Youth Conservation Corps program. YCC accomplishes needed conservation work on Federal land administered by the Secretaries of Agriculture and the Interior, and on other public lands through grants to States. It provides young men and women, 15-18 years of age, gainful summer employment and an opportunity to learn about their natural environment through actual field experience. During the summer of 1976, the Forest Service, the Department of the Interior, and States under the grant program operated over 1,000 camps in every State and territory.

While the program is very popular with participants, it has some serious disadvantages. The costs of the program exceed the cost of accomplishing the same work through regular employment. Employment provided is very limited, and by law, the program cannot be targeted to needy youths. Consequently, the 1978 budget proposes to operate the program at a reduced level.

All Forest Service activities seek to increase job opportunities and to raise standards of living under the Department of Agriculture rural development program where the activity is an appropriate Federal endeavor and when benefits are commensurate with costs. The Federal-State Rural Community Fire Protection program, which provided assistance to 2,800 communities in 1976, is an example of an inappropriate activity. Accordingly, no funding is proposed in 1978.

### THE FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT

In 1974, Congress concluded that the Forest Service should be looking more actively toward the future--next year and even the next century. What will be the Nation's demands upon its renewable natural resources base and what can the Forest Service do to provide its share of those goods and services? The Forest and Rangeland Renewable Resources Planning Act (PL 93-378) provides the direction for the Forest Service to do so.

The Act contains two major requirements:

- (1) The Forest Service must periodically submit to Congress a Renewable Resources Assessment for all of America's forest and rangeland--public and private.
- (2) It must also, through the Secretary of Agriculture, recommend a long-range Renewable Resources Program limited specifically to Forest Service activities--research, State and private cooperation and the National Forest System.

The first assessment and program were developed on the basis of currently available information, programs, and data sources. Existing data and studies from many Federal and State agencies, as well as from the Forest Service, were used as the basis for the assessment. The Forest Service's Environmental Program for the Future, prepared in 1974, was the starting point for developing the program proposed.



The program as developed included the elements of an environmental impact statement patterned on the principles outlined in the National Environmental Policy Act. Six resource systems, covering the full range of Forest Service responsibilities, were used. The six systems are:

- Outdoor recreation and wilderness
- Wildlife and fish
- Range
- Timber
- Land and water
- Human and community development

The public was involved extensively in developing the assessment and the program. Broad public review occurred at four different stages. Several thousand documents and letters containing information and suggestions were received in the process. This informed-citizen response from every State in the Union was supplemented by testimony at 14 hearings, hundreds of briefings, workshops, and public meetings around the country. These responses were all given consideration and helped shape the final decisions of the Chief of the Forest Service and the Secretary of Agriculture.

Social, environmental and economic tests were also applied to the eight possible alternative programs examined to the extent possible. The environmental impact statement process was used to determine positive and negative environmental, social and economic effects.

Time did not permit extensive economic analysis of specific program components to assure that all activities constitute net benefits. Time permitted evaluation of large aggregates only. Many measurement problems were unresolved. In the end, the final product relied heavily on judgment. The President's statement of policy indicated that "... the general goals recommended by the Secretary are desirable ends and are worthy of our careful consideration." The President noted that specific programs must be based on the determination of the size of the overall budget and its allocation and on basic reliance upon the private sector.

The Act establishes a basic framework for development and consideration of annual appropriation requests related to the long-term goals and objectives which characterize effective forest and rangeland resources planning.

#### Demands for Forest Resources

As Congress recognized in writing the Resources Planning Act, the basic step in creating a recommended program of Forest Service activities is the description of the present resource situation with projections of future demands for supplies of renewable resource products, together with comprehensive analysis of the benefits and costs of possible options. This assessment, as intended by Congress, provides the basic context for the program. It will be updated again in 1979 and then every decade thereafter. Some brief highlights of the assessment are described below:

#### Past Trends in Use

In response to past increases in population, economic activity and income, the demand for nearly all products of forest and rangelands, and the associated inland waters, has risen rapidly. The growth has been especially fast for some forms of outdoor recreation. For example, the number of households camping more than tripled between 1960 and 1973, rising from 4.3 million to 14.3 million before leveling off. Increases for most other products were more modest but substantial. Between 1960 and 1970, for example, the days spent hunting and fishing rose from 563 million to 771 million, indicating an increase in demand of 37 percent. Timber consumption rose from a level of around 11.5 billion cubic feet in the early 1960's to nearly 14 billion cubic feet--up 22 percent--and is projected to increase further at present prices.





### Projected Demands

Projections of demand for forest, range and inland water products, based on assumed increases in population, economic activity, income, prices and the other determinants used in the assessment, show continued growth through the projection period. However, as indicated by the illustrative projections in the tabulation below, there are differences in the amount of increase.

<u>Product</u>	<u>Base Year</u>	<u>Projected increase in demand</u> (medium level--base year equals 100)		
		<u>1980</u>	<u>2000</u>	<u>2020</u>
Remote camping .....	1975	106	133	180
Birdwatching .....	1975	107	138	168
Small game hunting .....	1975	106	121	136
Fresh water fishing .....	1975	111	156	205
Forest-range grazing .....	1970	135	150	164
Timber .....	1970	131	173	219
Water (consumptive use) .....	1975	103	123	139

Although there are differences in projected growth in demand, the increases are substantially above the levels that can be supplied with present management programs and existing facilities. This means that the Nation is faced with important choices. The major questions to be answered are: (1) how many of these projected demands can be met through Forest Service programs where benefits are at least equal to costs and (2) how much of the costs should be borne by specific beneficiaries as opposed to the general public.

### The Land and Water Base

There is a huge land and water base which can be used to meet demands. In 1970, 1.6 billion acres, some 69 percent of the Nation's area, were classified as forest and rangeland and inland water. About two-thirds of this area was in rangeland and noncommercial forest. These lands, chiefly used for grazing, include natural grasslands, savannas, shrublands, most deserts, tundra, coastal marshes, wet meadows and forested land, such as the pinyon-juniper forests of the Southwest that are incapable of producing crops of industrial wood. Another 500 million acres were commercial timberland, i.e., land that is capable of producing in excess of 20 cubic feet of industrial wood per acre a year in natural stands and not withdrawn for other uses. The remaining area--some 48 million acres--was classified as inland water and consisted of lakes, reservoirs and ponds over 40 acres in size (exclusive of the Great Lakes) and streams more than one-eighth mile in width.

About a third of the rangeland and noncommercial forest, 345 million acres, is in Alaska. Most of the remainder is in the States stretching westward from the Great Plains to the Pacific Coast.

Commercial timberlands are more widely distributed and, with the exception of the Great Plains and some of the Southwest, compose a significant part of the area of each State. However, nearly three-quarters of the area is in the humid eastern half of the country where it is about equally divided between the North and South. The one-quarter of the commercial timberland in the West is concentrated in the Pacific Coast States of Oregon, Washington, and California and the Rocky Mountain States of Montana, Idaho and Colorado.

The great bulk of the Nation's forest and rangeland in the contiguous States is in private ownerships. In 1970, the area in these ownerships, plus relatively small areas in State, county and municipal ownerships amounted to 825 million acres--about 70 percent of the forest and rangeland area.



Rangeland on which the grass form predominates is even more heavily concentrated in these ownerships. For example, in 1970, 99 percent of the prairie grasslands, 94 percent of the plains grasslands and 84 percent of the mountain grasslands were in non-Federal ownership, nearly all private.

In contrast, Federal ownership predominated on most of the rangeland shrub ecosystems; 82 percent of the sagebrush system and 70 percent of desert shrub were in Federal holdings. Federal ownership was also the dominant form on the non-commercial forest ecosystems--chaparral-mountain shrub and pinyon-juniper--in the contiguous States. It was also the dominant form in Alaska where in 1970 nearly all of the rangeland and noncommercial forest was Federally owned.

About 364 million acres, 73 percent of the Nation's commercial timberland, are in private ownerships. Much of this area is in highly productive sites and close to markets for timber products. These ownerships consequently have long been of major importance as a source of timber supplies for the wood-using industries. Nearly half of these timberlands are in the South and most of the remainder in the North.

The 136 million acres of commercial timberland in public ownership, largely Federal, are concentrated in the Rocky Mountains and Pacific Coast sections. Most are of relatively low site quality and located at higher elevations, but these forests nevertheless contain a substantial part of the Nation's timber inventory.

The productivity of the Nation's forest and rangelands varies widely as a result of differences in climate, soils, and elevation. In general, however, productivity is relatively low. For example, it is estimated that about a quarter of the rangeland areas in the contiguous States is in the lowest productivity class with another three-fifths in the moderately low class. A large proportion of the lands in these lower classes is in National Forest and other Federal ownership. Only 4 percent of the area was estimated to be in the high productivity class.

Nearly three-quarters of the rangeland was producing less than 60 percent of its potential in 1970. The largest proportion of lands in good condition was in the plains and prairie grasslands ecosystems.

More than a quarter of the commercial timberland is in the lowest site productivity class, i.e., land capable of producing 20 to 50 cubic feet of timber per acre per year in fully stocked natural stands. This class of land provides limited response to timber management activities but often yields important values for grazing, recreation, or other non-timber uses. These lower-site lands are mostly in eastern areas such as the Appalachians, and in the Rocky Mountains where this site class makes up about half of the commercial area. Nearly two-thirds of the total area of commercial timberland is in the 50 to 120 cubic foot productivity range. About half of this acreage is in the South.

The remaining 10 percent of the commercial area is in the highest productivity class--lands capable of producing 120 cubic feet or more of timber per acre per year. Nearly half of this highly productive land is in the Pacific Coast section, largely supporting Douglas-fir, hemlock-sitka spruce, and western hardwoods.

The potential yields indicated by site productivity classifications are generally not realized because the costs are high in relation to the expected benefits. However, practically all commercial timberland in 1970 was occupied to some extent by some type of tree cover and many forests were fully stocked or even overstocked in terms of all live trees.

#### Opportunities for Increasing Supplies

In time, and with additional investments in research, management programs and physical facilities, the output of nearly all forest, range and inland water products would be greatly increased and the higher levels of output sustained in the future. Additional work must be completed to ascertain how much of this would yield adequate benefits.



For example, the 1.6 billion acres of forest and rangeland, and the associated inland water, have the physical capacity to supply sites for picnicking, camping, hiking, skiing, birdwatching, swimming, and most other types of outdoor recreation that is far in excess of projected increases in demand. These lands, under proper management, also have the capacity to support much larger numbers of most species of wildlife, including those species in demand by hunters and fishermen, and non-consumptive users such as birdwatchers and photographers. Forage production from range can be nearly tripled and timber growth on commercial timberland more than doubled. Water supplies in deficient areas can also be substantially increased.

In addition to increasing supplies, it is possible to greatly extend the usable supplies of most forest and range products by improvements in the efficiency of utilization.

Some possible opportunities to increase and extend supplies include:

Outdoor recreation.--Projected increases in demands for nearly all types of outdoor recreation could be met by:

- Constructing additional facilities such as roads, trails, campgrounds, picnic areas, and boat ramps.
- Improving public access to forest and rangeland suitable for outdoor recreation, especially near urban areas where nearly all land is privately owned.
- Integrating all outdoor recreation uses, including scenic values, into land use planning and management.
- Improving maintenance of existing facilities and providing for adequate pollution abatement.

Wilderness.--The effective supply of wilderness could be increased by:

- Setting aside additional forest and rangeland areas as wilderness.
- Developing means to spread geographically and through time recreation use on established wildernesses.
- Implementing management programs on nonwilderness lands to meet the needs of people who do not require wilderness to satisfy recreation demands.

Wildlife.--The present wildlife and fish situation can be improved:

- Populations of most wildlife species can be increased by expanding food supplies, improving cover and minimizing the adverse impacts from the use of the land and water base for other purposes. At this time, much can be accomplished by effectively integrating wildlife needs into the management of the resource base for other products such as forage and timber.
- Waterfowl populations can be increased by expanding wetlands nesting habitats through fee purchase of key tracts and wetlands easements in the United States and Canada, and preserving and enhancing migration and wintering habitats.
- Fish populations can be increased by additional stocking of desirable species; improving habitat, and especially water quality, through control of various types of pollution and removing obstacles to migration by eliminating barriers and providing ladders or other passageways in water resource projects.



- Part of the prospective increases in demand for wildlife, for both consumptive and nonconsumptive uses, can be met by providing access through the construction of trails, boat landings and other facilities to places where the existing resource is under-utilized, and spreading use through time and in developed areas where the wildlife resource can support additional use.
- Endangered and threatened species require special measures. For some species, notably those most restricted and isolated, habitat must be preserved and protected from further encroachment. It may be possible to increase the populations of some species by transplanting them to unoccupied or newly developed habitat.

Forest-range forage.--The supply of forest-range forage can be increased and extended by:

- Obtaining better and more uniform utilization of existing forage by implementation of improved grazing systems, including better livestock distribution, building needed fences, developing needed sources of water, and using the proper kind and class of livestock for the range.
- Improving the growth and quality of forage by seeding of improved native and introduced forage species, control of undesirable plants, converting marginal forest or undesirable shrub stands to grasslands, use of managed fire, fertilization, and waterspreading and pitting.
- Coordinating forest-range management activities with other resource uses.
- Reducing loss of livestock and forest-range forage by improved control of wildfire, damaging range insects and diseases, predators, and livestock diseases and parasites.

Timber.--Timber supplies can be increased and extended by:

- More intensive management of all classes of commercial timberland by such measures as timber stand improvement; commercial thinning and salvage; reforestation; better protection against fire, insects, diseases and other destructive agents; road construction, fertilization; and the use of genetically improved planting stock. More complete utilization of logging residues, plant residues and trees lost by mortality; and greater use of recycled fibers.
- Greater use of modern equipment and new technology to increase output of lumber and other products from available log supplies and raise the efficiency with which products are used in construction and manufacturing.

Water.--Water supplies can be increased in a given area by interregional or inter-basin transfer, desalting and precipitation modification.

Water supplies can be extended by:

- More intensive watershed protection and management of forest and rangelands to enhance the natural recharge of groundwater and improve timing of flows by storage and/or vegetation modification.
- Improving the efficiency of irrigation systems by reducing transmission losses, phreatophyte management, and more efficient application methods.
- Improving the efficiency of central supply systems by elimination of leaks in transmission systems, use of water meters with charges according to use and implementation of water saving technology such as more efficient plumbing fixtures and appliances.
- Pricing to encourage more efficient use of water.





General opportunities to increase and extend supplies.--Most of the Nation's forest and rangeland, and inland water, is in private ownership. A variety of studies has shown that these owners have diverse objectives, widely different characteristics and attitudes, a limited knowledge of existing management opportunities and varying willingness and capacity to make investments which will increase and extend supplies of forest and range products.

While opportunities exist to achieve substantial increases in the supplies of most forest and range products from these ownerships by such measures as cost sharing programs to help finance management practices and technical assistances and educational programs to show landowners how to develop and manage forest and range resources, it is yet to be determined how much should be achieved.

Much can be done to increase and extend supplies of forest and range products by better use of existing technology. However, research to develop better technology is another approach. More information is needed, for example, about physical responses in terms of changes in wildlife populations and in forage and timber growth to various kinds of management practices. More data are also needed on the cost of management practices, the prices and uses of forest and range products, and the physical aspects of the forest and range resource. Research on ways of using forest and rangeland, and inland water, which will minimize impacts on the environment is becoming increasingly urgent.

#### The Renewable Resource Program

The program was developed in a series of systematic steps as follows:

First, the resource situation for each of the six systems was reviewed including the Nation's current inventory of renewable resources, as well as potential growth and projected demand as previously described. Resource needs and deficiencies identified by the assessment and opportunities by which the activities of the Forest Service could be applied to overcoming them were catalogued.

Three to five alternative goals were developed for each resource system. These represented options which would harmonize among all systems. These broad, general goals for each resource system were broken into a series of quantifiable targets expressed in terms of yields of goods or services. A program was then formulated for each goal to describe the activities and commitments necessary to attain the related targets. An environmental analysis was developed for each resource system. Net effects upon the quality of the environment--natural, social, and economic--were analyzed. An attempt was made to detail changes in environmental impacts that would occur with changes in goals.

The various programs for each system were brought together to form a series of multi-resource programs offering a variety of directions renewable resource management could take. From a possible 5,000 combinations, eight alternative program directions were chosen as being physically possible and covering a broad spectrum of program options.

After a period of active public review, the many comments and suggestions were assimilated, analyzed, and considered in shaping the recommended program.

The time for this first assessment and planning effort was very limited. Long-term projections are difficult to make with assurance. Long-term programing must be tempered by changing conditions and by better understanding of relationships between program efforts and results. There was not time to collect all the data and to make all the analyses that would be desirable. The Forest Service and the Department are committed to gathering more information and further evaluation of projections and program approaches in the future.



## ECONOMIC IMPORTANCE OF NATIONAL FORESTS AND NATIONAL GRASSLANDS

- (1) The forests and grasslands provide opportunities for healthful outdoor recreation, with a minimum of restrictions. In 1975, the number of recreation visitor-days (each equivalent to one person spending 12 hours) was almost 209.5 million, more than one-half of all the Federal outdoor recreation and more than twice that provided by any other agency. Outdoor recreation is an important source of supplementary income in most areas, as well as providing recreational opportunities for local residents. In some relatively depressed communities, it has become vitally important.
- (2) More than 93 percent of the total National Wilderness Preservation System is National Forest System land. The 87 wildernesses contain 11.9 million acres.
- (3) National Forests provide habitat for much of the Nation's fish and wildlife, including about 50 percent of the Nation's big game. Habitat for 50 species of endangered fish and wildlife is on these lands. Hunters, fishermen and appreciative wildlife users (photographers and birdwatchers) constitute an important supplementary source of income for numerous communities near these lands.
- (4) Some 3.2 million head of domestic livestock (mature animals) are grazed on National Forests and Grasslands, assisting about 20,000 rural families by providing supplementary feed for the animals.
- (5) The National Forests supplied 9.58 billion board feet of timber in fiscal year 1976 to the Nation's forest products requirements. Dependence of the forest products industries on National Forest timber continues to increase as a result of depletion of good quality timber on private lands. Without this supply, the national demand for wood and fiber products could not be met at reasonable prices.
- (6) About 390 million acre feet of high quality water are provided annually from National Forest System lands. Most Western cities and many in the East benefit from National Forest protection of municipal supplies. About 20 million acres of Western lands are irrigated by water from National Forests.
- (7) About \$300 million worth of minerals, oil, and gas are extracted annually from National Forest lands.
- (8) These lands produced a cash income in fiscal year 1976 of \$454.7 million. Approximately 65 percent of this amount was credited to the general fund in the Federal treasury (miscellaneous receipts). The remainder was distributed in accordance with special acts of Congress, including 25 percent of receipts to States or counties in which lands are located.
- (9) The area within National Forest and National Grassland boundaries is equivalent to about 10 percent of the area of the United States. About 24 percent of this land is within areas now experiencing economic distress. Proper management, development and utilization of these lands are important factors in permanent improvement of these local economies. Millions of people who live in and near the National Forests are supported in whole or in part through the economic development based on the forests and their resources.
- (10) The increased demands for recreation and commodity products greatly accelerate demand for special uses of forest land. The Forest Service administers 74,000 special permits for such things as powerlines, pipelines, microwave towers, ski areas, waterpower facilities, and many others.



## ORGANIZATIONAL STRUCTURE

The Forest Service maintains its central office in Washington with program activities decentralized to 9 regional offices, 121 forest supervisors' offices, 666 district rangers' offices, 2 State and private forestry area offices, 8 forest and range experiment stations, the Institute of Tropical Forestry, and the Forest Products Laboratory. Location of headquarters offices:

Regional offices:	Missoula, Montana	Portland, Oregon
	Denver, Colorado	Atlanta, Georgia
	Albuquerque, New Mexico	Milwaukee, Wisconsin
	Ogden, Utah	Juneau, Alaska
	San Francisco, California	

State and private forestry area offices: Upper Darby, Pennsylvania  
Atlanta, Georgia

Experiment stations:	Ogden, Utah	Berkeley, California
	St. Paul, Minnesota	Fort Collins, Colorado
	Upper Darby, Pennsylvania	Asheville, North Carolina
	Portland, Oregon	New Orleans, Louisiana

Forest Products Laboratory: Madison, Wisconsin

Institute of Tropical Forestry: Rio Piedras, Puerto Rico

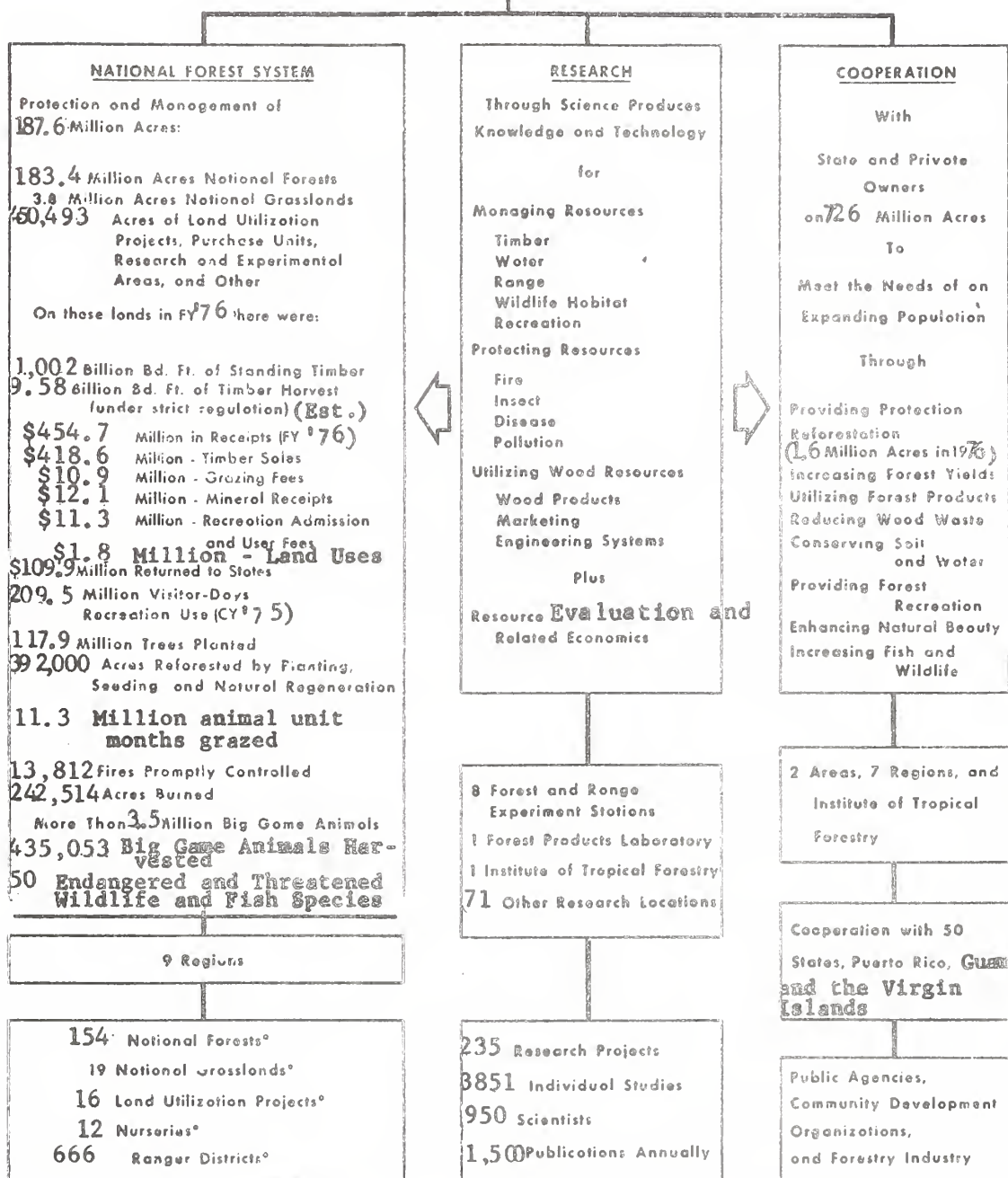
National Forest, National Grasslands, and Utilization lands administered by the Forest Service are located in all States except the following six:

Delaware	Massachusetts
Hawaii	New Jersey
Maryland	Rhode Island



# U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE

## MAJOR ACTIVITIES



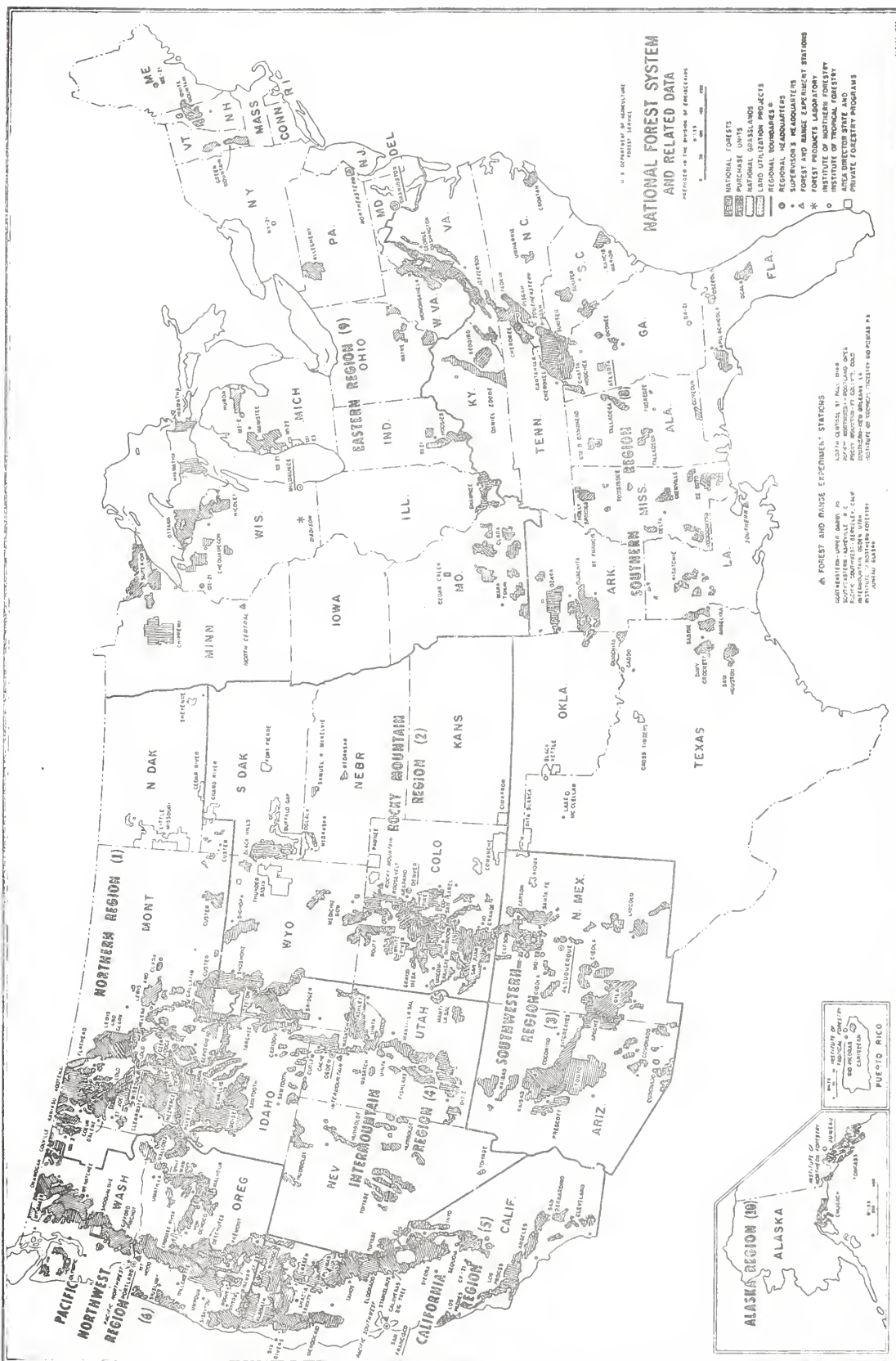
° ADMINISTERED BY 21 SUPERVISORS

Figure 1

December 1976









Summary of Estimated Appropriations and Receipts

Item	1/ Available 1976	Available transition quarter	Estimated available 1977 2/	Budget estimate 1978	Change
<u>Appropriated Funds:</u>					
Forest protection and utilization:					
Forest land management 3/	\$549,658,000	\$160,770,000	\$408,837,000	\$424,573,000	+\$15,736,000
Forest research	82,280,000	22,326,000	89,927,000	95,650,000	+5,723,000
State and pri- vate forestry cooperation	33,158,000	9,862,000	33,492,000	24,743,000	-8,749,000
Total, Forest protection and utili- zation ....	665,096,000	192,958,000	532,256,000	544,966,000	+12,710,000
Construction and land acquisi- tion 3/ .....	18,523,000	11,269,000	18,300,000	22,564,000	+4,264,000
Forest roads and trails 3/.....	112,857,000	- -	210,094,000	205,022,000	-5,072,000
Forest roads (tim- ber purchaser construction)	- -	- -	173,000,000	212,115,000	+39,115,000
Acquisition of lands for Na- tional Forests,					
Special Acts ..	161,000	- -	160,000	165,000	+5,000
Acquisition of lands to complete					
land exchanges	35,000	- -	54,000	38,000	-16,000
Rangeland improve- ments .....	700,000	- -	700,000	5,200,000	+4,500,000
Assistance to States for tree improvement 3/	1,368,000	834,000	1,386,000	1,387,000	+1,000
Construction and operation of rec- reation facili- ties 3/.....	2,879,601	2,212,000	2,475,000	4,084,000	+1,609,000
Youth conservation corps 3/ .....	35,098,000	56,000	30,000,000	16,200,000	-13,800,000
<u>Permanent Appro-</u> <u>priations</u>					
Expenses, brush disposal 3/ ...	28,906,310	10,645,307	33,000,000	34,290,000	+1,290,000
Roads and Trails for States, Na- tional Forests					
Fund .....	35,908,943	49,809,598	13,578,435	51,850,000	+38,271,565
Licensee Pro- grams 3/ .....	229,827	37,404	300,000	310,000	+10,000
Restoration of forest lands and improvements 3/	51,201	15,542	50,000	50,000	- -



Summary of Estimated Appropriations and Receipts--continued

Item	1/ Available 1976	Available transition quarter	Estimated available 1977 2/	Budget estimate 1978	Change
Permanent Approp- riations--cont'd.					
Payment to Minne- sota (Cook, Lake, and St. Louis Counties) from the National For- ests Fund .....	\$259,038	\$259,038	\$64,760	\$259,038	+\$194,278
Payments to Coun- ties, National Grasslands .....	985,510	- -	990,000	1,000,000	+10,000
Payments to school funds, Arizona and New Mexico .	76,827	146,747	38,200	150,000	+111,800
Payments to States, National Forests Fund ...	87,793,908	109,523,445	48,946,378	189,120,000	+140,173,622
Total .....	990,929,165	377,766,081	1,065,392,773	1,288,770,038	+223,377,265
Permanent approp- riations shown above .....	154,211,564	170,437,081	96,967,773	277,029,038	+180,061,265
Total (exclud- ing permanent appropriations)	836,717,601	207,329,000	968,425,000	1,011,741,000	+43,316,000
Receipts					
Timber sales ....	407,205,015	188,443,661	485,000,000	552,000,000	+67,000,000
Grazing .....	9,241,970	643,466	9,250,000	12,990,000	+3,740,000
Power .....	327,402	5,134	525,000	525,000	- -
Recreation .....	6,464,479	732,323	6,800,000	7,300,000	+500,000
Land uses .....	1,406,505	88,752	1,450,000	1,500,000	+50,000
Mineral leases and permits .....	8,737,337	2,457,455	10,800,000	11,000,000	+200,000
Admission and user fees .....	4,860,013	3,589,757	5,000,000	5,200,000	+200,000
National grass- lands and land utilization ....	5,029,927	1,134,682	5,210,000	6,230,000	+1,020,000
Oregon and Cali- fornia grant lands: 4/ Timber sales ..	11,354,482	7,902,577	15,000,000	25,000,000	+10,000,000
Other .....	35,547	2,502	- -	- -	- -
Total receipts:	454,662,677	205,000,309	539,035,000	621,745,000	+82,710,000

1/ Includes \$60 million of trust funds used for fighting forest fires repaid in transition quarter and fiscal year 1977.

2/ Excludes proposed supplemental for: fighting forest fires, \$207 million; minerals area management, \$975,000; and Alpine Lakes area planning, \$234,000.

3/ In addition, prior year balances are available.



4/ Account established for Oregon and California railroad grant lands, for which receipts are transferred to Department of the Interior for distribution under the Acts of August 28, 1937, June 24, 1954, and August 3, 1961 (43 USC 1181f-g).

5/ Excludes following collections made by others for use of the public domain National Forests land:

Federal Power Commission--power licenses	
(41 Stat. 1063) .....	\$191,534 (estimate)
Department of the Interior, Bureau of Land Management--	
mineral leases, licenses and permits (PL 93-153;	
87 Stat. 576; 30 USC 185) .....	\$79,282,409 (estimate)





JOB CORPS CIVILIAN CONSERVATION CENTERS  
(Funds transferred to Forest Service by Department of Labor)

	: 1976 :		: Transition : : Quarter :		: Estimate 1977 :		: Estimate 1978 :	
	: Perm. :	: Amount :	: Amount :		: Perm. :	: Amount :	: Perm. :	: Amount :
	: man- :	: (in :	: (in :		: man- :	: (in :	: man- :	: (in :
	: years :	: thous.):	: thous.):		: years :	: thous.):	: years :	: thous.):
Center capital .....	2	\$3,239	\$64		1	\$923	1	\$255
Center operations ....	568	19,415	4,898		547	20,623	538	21,134
Program direction ....	67	1,884	476		66	2,009	66	2,235
Vocational skills ....	10	3,117	796		8	3,184	8	3,184
Union contracts .....	- -	2,503	633		- -	2,548	- -	2,548
Total .....	647	30,158	6,867		622	29,287	613	29,356

NOTE: Fiscal years 1977 and 1978 estimates are based on best information available to the Forest Service as of December 7, 1976.



Type size :  
6 point  
14 1/2 picas  
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STANDARD FORM 306

July 1968, Bureau of the Budget  
Circular No. A-11, Revised  
306-103

FOREST SERVICE

CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID  
FROM FUNDS AVAILABLE TO THE FOREST SERVICE

DETAIL OF PERMANENT POSITIONS

	19 76 actual	19 77 estimate	19 78 estimate
Executive level V .....	1	1	1
GS-18 .....	5	5	5
GS-17 .....	7	8	8
GS-16 .....	41	41	41
GS-15 .....	199	206	206
GS-14 .....	528	550	553
GS-13 .....	1,497	1,528	1,537
GS-12 .....	2,490	2,538	2,553
GS-11 .....	3,995	4,068	4,092
GS-10 .....	63	62	63
GS-9 .....	4,142	4,179	4,203
GS-8 .....	175	185	186
GS-7 .....	3,290	3,357	3,378
GS-6 .....	1,124	1,162	1,169
GS-5 .....	2,506	2,564	2,580
GS-4 .....	1,566	1,559	1,569
GS-3 .....	493	517	517
GS-2 .....	62	66	65
GS-1 .....	6	9	9
Subtotal .....	22,190	22,605	22,735
Grades established by Act of June 20, 1958 (72 Stat. 213) and Act of September 23, 1959 (73 Stat. 651):			
Mensurationist, \$39,600 .....	1	1	1
Ecologist, \$39,600 .....	1	1	1
Forest products technologist, \$39,600 .....	1	.....	.....
Scientist, \$39,600 .....	1	2	2
Subtotal .....	4	4	4
Grades established by the Administrator, Agency for International Development:			
FC-11, \$28,358 to \$37,828 .....	1	1	1
FC-10, \$24,308 to \$31,598 .....	6	6	6
Subtotal .....	7	7	7
Ungraded .....	1,162	1,162	1,170
Total permanent positions .....	23,363	23,778	23,916
Unfilled positions, end of year .....	-3,546	-3,678	-3,816
Total permanent employment, end of year .....	19,817	20,100	20,100
(Mono cast: 16.3)	(Mono cast: 4.9)	(Mono cast: 4.9)	(Mono cast: 4)



The Forest Service is responsible for promoting the conservation and wise use of the country's forest, range, and related watershed lands which comprise about one-third of the total land area of the United States. There are fourteen separate appropriation accounts and four payment accounts in the Forest Service budget, and at least ten appropriation activities representing allocations from other agencies which are required to carry out Forest Service responsibilities. The Forest Service is organized to meet the overall responsibilities, not to meet the responsibility of each activity. An employee or group of employees may work on several activities during the course of a year. It is not possible to determine the positions involved in a single activity. Therefore, a consolidated schedule of permanent positions is presented.









DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST PROTECTION AND UTILIZATION

A-11-32a

Type doc:  
17914/2

STANDARD FORM 300-T FOREST PROTECTION AND UTILIZATION  
June 1975, Office of Management and Budget Program and Financing (in thousands of dollars)  
Circular No. A-11, Revised.

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-1100-0-1-302				
Program by activities:				
Direct program				
1. Forest land management:				
(a) National Forest protection and management .....	332,812	105,933	391,671	392,851
(b) Fighting forest fires .....	150,607	70,427	8,275	4,275
(c) Forest insect and disease management	15,223	4,823	20,590	17,500
(d) Cooperative law enforcement .....	3,779	1,548	5,855	5,710
Total forest land management .....	502,421	182,731	426,391	420,336
2. Forest research:				
(a) Forest and range management .....	32,158	9,538	35,520	34,600
(b) Forest protection ..	27,180	6,497	27,770	27,350
(c) Forest products and engineering .....	12,546	2,784	14,260	12,930
(d) Forest resource economics .....	10,011	2,708	13,235	16,660
Total forest research .....	81,895	21,527	90,785	91,540
3. State and private forestry cooperation:				
(a) Forest fire control	23,165	5,176	23,595	13,440
(b) Forest tree production .....	370	71	300	530
(c) Forest management and processing ...	5,551	893	7,000	7,730
(d) General forestry assistance .....	4,413	1,044	5,605	6,390
Total State and private forestry cooperation .....	33,499	7,184	36,500	28,090
Total direct program .....	617,815	211,442	553,676	539,966
Reimbursable program				
1. Forest land management ..	7,815	3,773	9,000	9,000
2. Forest research .....	1,941	785	2,100	2,100
3. State and private forestry cooperation .....	641	131	700	700
Total reimbursable program	10,397	4,689	11,800	11,800
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 8)



A-11-32a

Type doc:  
170144/23

**STANDARD FORM 300-T FOREIGN**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## FOREST PROTECTION AND UTILIZATION

**Program and Financing (in thousands of dollars)--continued**

[illegible]



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST PROTECTION AND UTILIZATION

A-11-32a

Type size:  
170M/22

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Program and Financing (in thousands of dollars)--continued

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
Relation of obligations to outlays:				
71.00 Obligations incurred, net	555,395	235,549	537,976	544,966
72.00 Obligated balance, start of period .....	87,343	80,042	112,503	71,690
74.00 Obligated balance, end of period .....	-80,042	-112,503	-71,690	-79,347
77.00 Adjustments in expired accounts .....	-636	-298	.....	.....
90.00 Outlays, excluding pay raise supplemental .....	562,060	202,790	564,909	536,425
91.20 Outlays from civilian pay raise supplemental .	.....	.....	13,880	884
1/ Includes capital outlay as follows: 1976, \$6,261 thousand; Transition Quarter, \$8,208 thousand; 1977, \$9,000 thousand; 1978, \$9,000 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)









# FOREST PROTECTION AND UTILIZATION

## FOREST LAND MANAGEMENT

		Permanent full-time man-years
Appropriation, 1976 .....	\$489,658,000	9,442
Appropriation, transition quarter .....	(160,770,000)	
Estimate, 1977 ..... 1/	408,837,000	9,675
Estimate, 1978 .....	424,573,000	9,982
Change .....	+15,736,000	+307

1/ Fiscal year 1977 excludes proposed supplemental of \$975,000 for minerals area management.

## SUMMARY OF INCREASES AND DECREASES

(On basis of adjusted appropriation--dollars in thousands)

	Increase or Decrease (-)			Total	Total
	Pay and other support services	Program	Permanent full-time man-years	1978 estimate	Permanent full-time man-years
<u>Sales administration and management--Consists of increases of \$3,081,000 to prepare 10,250 billion board feet for sale offering and decrease of \$3,081,000 in harvest administration on assumption that timber harvest will reach only 10.5 billion board feet. ....</u>	\$877	- -	- -	\$109,115	3,158
<u>Reforestation and timber stand improvement--Increase consists of \$2,432,000 increase for reforestation; \$3,455,000 decrease in timber stand improvement; and \$1,023,000 increase in genetic tree improvement. .</u>	571	- -	- -	65,227	894
<u>Recreation use--Increase consists of \$994,000 for administration of concessions and recreation permits; \$1,184,000 for operation and maintenance; \$1,029,000 for planning and inventories to develop management plans for Snake and Rapid Wild and Scenic Rivers, complete Hells Canyon plan and four wilderness plans, develop ski touring trail standards, identify potential bike trails, and meet wilderness study requirements; \$506,000 for wilderness administration; and \$179,000 for Visitor Information Service. ....</u>	684	\$3,892	95	65,587	1,456



SUMMARY OF INCREASES AND DECREASES--continued  
(On basis of adjusted appropriation--dollars in thousands)

	Increase or Decrease (-)				
	Pay and other support services	Program	Permanent full-time man-years	Total 1978 estimate	Total Permanent full-time man-years
<u>Wildlife and fish habitat</u>					
management--Increase would be used for cooperative wildlife and fish habitat restoration and development and coordination with other related resource activities to comply with the Endangered Species Act. ....	\$237	\$1,832	42	\$16,000	426
<u>Soil and water management--</u>					
Increase would be used for providing soil and water knowledge in support of related resource activities. .	235	1,882	42	22,310	565
<u>Minerals area management--</u>					
Increase consists of \$1,667,000 for impacts of energy resource activities (1977 supplemental of \$975,000 is being proposed); \$150,000 for surface restor- ation and administration of lands valuable for metals resources; \$85,000 for adminis- tration of activities of common varieties production, fertili- zers, and other chemical resources and activities associated with mineral reserva- tion and rights outstanding. .	100	1,902	47	10,360	285
<u>General land management activities--</u>					
Net increase consists of increase of \$929,000 for marking land lines and monuments; \$956,000 for geomet- ronics products; \$881,000 for maintenance of fire and general purpose facilities, including com- munications; \$155,000 to improve the standards of administration of special uses; \$894,000 to reimburse the Employees' Compensa- tion Fund; and a decrease of \$144,000 in the land classification program. ....	436	3,671	59	40,643	872
<u>Forest insect and disease manage-</u>					
ment--Increase consists of \$1,764,000 to broaden the scope and coverage of on-going detec- tion and evaluation activities to provide additional technical assistance to land managers. .	54	1,764	21	18,011	257



SUMMARY OF INCREASES AND DECREASES--continued  
(On basis of adjusted appropriation--dollars in thousands)

	Increase or Decrease (-)			Total	Total
	Pay and		Permanent	1978	Permanent
	other support	Program	full-time	estimate	full-time
	services		man-years		man-years
<u>Cooperative law enforcement--</u>					
Increase would provide for maintaining approximately 460 cooperative agreements with local law enforcement agencies. ....	\$22	\$238	1	\$5,865	45
<u>Rangeland management--Decrease</u>					
in program level under this fund is proposed. An appropriation of \$5.2 million is proposed under Rangeland Improvements for a total of \$27,736,000 for this program. The net total increase is \$1,582,000 in 1978. ....	82	-3,000	- -	22,536	581
<u>Forest fire protection. ....</u>	257	- -	- -	44,644	992
<u>Fighting forest fires. ...</u>	- -	- -	- -	4,275	451
Total, Forest land management. ....	3,555	12,181	307	424,573	9,982



FOREST PROTECTION AND UTILIZATION -- FOREST LAND MANAGEMENT

PROJECT STATEMENT  
(On obligation basis)

Project	1976	Transition : quarter	1977 1/ estimate	1978 estimate	Change
<u>FOREST LAND MANAGEMENT:</u>					
<u>National Forest protection and management:</u>					
(1) Timber resource management:					
(a) Sales administration and management .....	\$101,376,925	\$36,246,001	\$108,238,000	\$109,115,000	+\$877,000
(b) Reforestation and stand improvement .....	52,576,256	17,769,741	64,656,000	65,227,000	+\$571,000
(2) Recreation use .....	52,910,963	25,158,171	61,011,000	65,587,000	+\$4,576,000
(3) Wildlife and fish habitat management .....	11,372,831	3,982,196	13,931,000	16,000,000	+\$2,069,000
(4) Rangeland management .....	18,850,828	6,945,184	26,154,000	22,536,000	-\$3,618,000
(5) Soil and water management .....	17,724,390	6,028,060	20,193,000	22,310,000	+\$2,117,000
(6) Minerals area management .....	6,576,040	2,195,873	8,358,000	10,360,000	+\$2,002,000
(7) Forest fire protection .....	38,351,698	13,785,452	44,391,147	44,644,000	+\$252,853
(8) General land management activities .....	33,631,307	11,859,717	36,536,000	40,643,000	+\$4,107,000
Special uses--non-recreation .....	(5,194,880)	(1,432,324)	(6,009,000)	(6,218,000)	+\$209,000
Land classification, adjustments, and surveys .....	(13,328,911)	(5,764,588)	(13,611,000)	(15,596,000)	+\$1,985,000
Maintenance of improvements for fire and general purposes (including communications) .....	(11,766,884)	(4,662,805)	(12,670,000)	(13,689,000)	+\$1,019,000
Payments to Employees' Compensation Fund .....	(3,340,632)	(-)	(4,246,000)	(5,140,000)	+\$894,000
Subtotal .....	333,371,238	123,970,395	383,468,147	396,422,000	\$12,953,853
Amount advanced from Cooperative Range Improvements	-720,828	-	-700,000	2/	+700,000
Subtotal, National Forest protection and management .....	332,650,410	123,970,395	382,768,147	396,422,000	\$13,653,853
(9) Fighting forest fires 1/ .....	150,933,396	70,527,525	4,275,000	4,275,000	-
(10) Forest insect and disease management .....	16,747,188	4,074,579	21,353,346	18,011,000	-\$3,342,346
(11) Cooperative law enforcement .....	3,721,782	1,567,709	6,160,650	5,865,000	-\$295,650
Total obligations or estimate .....	504,052,776	200,140,208	414,557,143	424,573,000	+\$10,015,857
Unobligated balance brought forward .....	-3,960,306	-49,565,530	-5,720,143	-	+\$5,720,143
Unobligated balance carried forward .....	49,565,530	5,720,143	-	-	-
Unobligated balance lapsing .....	-	4,475,179	-	-	-
Total available or estimate .....	549,658,000	160,770,000	408,837,000	424,573,000	+\$15,736,000
Transfer from other accounts .....	-60,000,000	-	-	-	-
Appropriation or estimate .....	489,658,000	160,770,000	408,837,000	424,573,000	+\$15,736,000
1/ Excludes proposed supplementals in fiscal year 1977--fighting forest fires, \$207 million, and minerals area management, \$975,000.					

2/ It is proposed that effective in fiscal year 1978, Cooperative Range Improvements funds be included in the appropriation,  
Rangeland Improvements, and not merged with Forest land management.





GEOGRAPHIC BREAKDOWN OF OBLIGATIONS

## National Forest Protection and Management

	1977 estimate	1978 estimate (in thousands)	Increase
Alabama .....	\$3,043	\$3,138	\$95
Alaska .....	13,534	13,956	422
Arizona .....	15,400	15,880	480
Arkansas .....	9,383	9,675	292
California .....	56,952	59,318	2,366
Colorado .....	17,541	18,088	547
District of Columbia .....	23,027	23,744	717
Florida .....	3,055	3,150	95
Georgia .....	2,826	2,914	88
Idaho .....	34,548	35,624	1,076
Illinois .....	1,455	1,500	45
Indiana .....	1,050	1,083	33
Kansas .....	52	54	2
Kentucky .....	2,781	2,868	87
Louisiana .....	2,981	3,074	93
Maine .....	221	228	7
Maryland .....	333	343	10
Michigan .....	6,854	7,068	214
Minnesota .....	6,754	6,964	210
Mississippi .....	4,577	4,720	143
Missouri .....	3,873	3,994	121
Montana .....	25,673	26,473	800
Nebraska .....	672	693	21
Nevada .....	3,773	3,891	118
New Hampshire .....	1,632	1,683	51
New Mexico .....	13,480	13,900	420
New York .....	109	112	3
North Carolina .....	3,820	3,939	119
North Dakota .....	271	279	8
Ohio .....	696	718	22
Oklahoma .....	770	794	24
Oregon .....	50,316	52,296	1,980
Pennsylvania .....	1,904	1,963	59
Puerto Rico .....	590	608	18
South Carolina .....	2,613	2,694	81
South Dakota .....	3,509	3,618	109
Tennessee .....	2,684	2,768	84
Texas .....	3,328	3,432	104
Utah .....	12,664	13,059	395
Vermont .....	917	946	29
Virginia .....	4,322	4,457	135
Washington .....	23,869	24,613	744
West Virginia .....	2,147	2,214	67
Wisconsin .....	3,811	3,930	119
Wyoming .....	9,658	9,959	301
Total .....	383,468	396,422	12,954



TIMBER RESOURCE MANAGEMENT--Sales administration and management  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$104,288,000	3,081
Transition quarter .....	(36,852,000)	
1977 .....	108,238,000	3,158
1978 .....	109,115,000	3,158
Change .....	<u>+877,000</u>	<u>- -</u>

A net increase of \$877,000 is proposed as follows, with no change in permanent full-time man-years:

- (1) Increase of \$3,081,000 to prepare 10.250 billion board feet for sale offering, and in addition to over 250 million board feet from the inventory of prepared sales. This increase is required due to continuing escalation in costs of sale preparation work.
- (2) Decrease of \$3,081,000 in harvest administration on the assumption that National Forest timber harvest will be 10.5 billion board feet.
- (3) Increase of \$877,000 to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and for other support services.

The total program follows:

	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977 estimate</u>	<u>FY 1978 estimate</u>	<u>Change</u>
	(in thousands)				
Sale preparation .....	\$55,762	\$15,987	\$54,610	\$58,117	+\$3,507
Harvest administration .....	32,475	15,795	34,325	31,500	-2,825
Enforcement of log export and substitution controls .....	710	185	460	462	+2
Subtotal, preparation and harvest .....	<u>88,947</u>	<u>31,967</u>	<u>89,395</u>	<u>90,079</u>	<u>+684</u>
Timber inventory, management planning, and stand manage- ment control .....	\$6,250	\$1,850	\$6,556	\$6,623	+\$67
Silvicultural examination ...	9,091	3,035	12,287	12,413	+126
Subtotal, inventory and examination .....	<u>15,341</u>	<u>4,885</u>	<u>18,843</u>	<u>19,036</u>	<u>+193</u>
Total .....	<u>104,288</u>	<u>36,852</u>	<u>108,238</u>	<u>109,115</u>	<u>+877</u>

Preparation and Administration

GOAL: To sell timber with consideration for all National Forest resource inventories, uses, and values, and in view of economic conditions and to the point where benefits are commensurate with costs. In preparing and administering timber sales, three objectives are:

- (1) To prepare all sales in accordance with the unit's land management and timber management plan.



- (2) To administer the operation of all timber sales in accordance with the terms of the timber sale contract.
- (3) To increase the utilization and utility of wood and wood products to help meet the Nation's short- and long-term needs.

National Forest timber sales preparation and administration is a major part of the timber resource system. The budget provides for preparing 10.25 billion board feet for sale and offering an additional .25 billion board feet from prepared but unoffered sales.

The demand for timber and the annual timber harvest from the National Forests continues to rise steadily in the long run but in the short run is quite sensitive to business and building cycles. A rapid change, upward or downward, in the demand for some products such as lumber or plywood, results in a quick and sharp fluctuation of price. Response of industrial production may significantly lag behind upward price fluctuations because of limitations on:

- (1) Mill capacity,
- (2) Logging equipment,
- (3) Labor force, or
- (4) Immediately available raw material.

Timber management often enhances other resource systems by improving wildlife habitat and recreational potential through clearing of timber stands and developing access roads.

Rural community development is served by timber production. Both harvesting and wood processing industries provide employment in rural areas.

Home building is less costly if a steady, abundant supply of wood is available. Consumers generally benefit from lower prices for wood and paper products.

This program proposal includes adjustments of funding allocations between sale preparation and harvest administration which are based upon the following assumptions:

- (1) The demand for National Forest timber harvest in fiscal year 1978 will be only 10.5 billion board feet.
- (2) Funds and manpower programed for harvest administration in fiscal year 1977 can be shifted to sale preparation in fiscal year 1978.

Should harvest volumes exceed the projected amount substantially in ways which require more administration and thus invalidate the above assumptions, it will be necessary to (1) seek supplemental funding for fiscal year 1978 or (2) adjust the sale preparation volume downward.

The following tabulation of workload and cost information shows funding distribution based upon the above assumptions (excludes sale offering of 250 million board feet already prepared "on-the-shelf" timber volume):



	Project (1a)			
	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977 estimate</u>	<u>FY 1978 estimate</u>
<u>Sale preparation</u>				
Million board feet (local scale) ...	11,320	3,220	10,750	10,250
Cost per thousand board feet .....	\$4.93	\$4.96	\$5.08	\$5.67
Total cost (in thousands) .....	\$55,762	\$15,987	\$54,610	\$58,117
<u>Harvest administration</u>				
Expected harvest level in million board feet (local scale) .....	9,575	3,432	10,000	10,500
Total cost (in thousands) .....	\$32,475	\$15,795	\$34,325	\$31,500

#### Examples of Recent Accomplishments

Recent and estimated returns to the Treasury from the harvest of National Forest timber are summarized in the following tabulation:

<u>Fiscal Year</u>	<u>Receipts (in millions)</u>
1974 .....	\$459.9
1975 .....	341.3
1976 .....	418.6
Transition quarter ...	196.3
1977 .....	500.0 (estimated)
1978 .....	577.0 (estimated)

The record of timber harvested and sold during the past 3 years is compared with the potential yield in the following table:

<u>Fiscal Year</u>	<u>Potential Yield Annual Basis 1/</u>	<u>Actual Volume Harvested</u>	<u>Percent of Potential Actually Harvested</u>	<u>Actual Volume Sold 2/</u>	<u>Percent of Potential Actually Sold</u>
(Volumes in billion board feet, local scale)					
1974	13.3 3/	11.0	83	10.2	77
1975	15.8	9.2	58	10.8	68
1976	16.2	9.6	59	10.3	64

1/ As of the beginning of the fiscal year. Includes sawtimber and small (convertible) products on standard, special, and marginal commercial forest land.

2/ There are additional volumes prepared and released for harvest on long-term sales in Alaska. Also, there were additional volumes offered for sale for which there were no bids.

3/ Annual allowable harvest as of January 1, 1974.

#### National Forest Timber Inventory and Plans

GOAL: To obtain timber resource information for use in land management planning and to plan the orderly development of timber production on the National Forests. A specific objective is to develop the capability for periodic updating of timber management plans to recognize the changes increased growth rates and other activities generate.

A comparison of proposed outputs follows:





	Project (1a)			
	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977</u>	<u>FY 1978</u>
<u>Timber management plans</u>				
Management plan inventory (in thousand acres) .....	12,999	4,300	11,643	10,616
Management plan revision (number) ...	15	- -	30	34
<u>Silvicultural examination</u>				
(in thousand acres) .....	4,285	2,225	7,072	5,425

In the last two years greater emphasis has been laid on completing timber management plans. Silvicultural examinations provide the data base on which to base decisions concerning many other operations, for example reforestation and sale preparation. As activity or complexity in these areas increases, good planning requires that silvicultural examinations be increased also. As a minimum, each stand should be examined and the prescriptions revised on a ten-year cycle, to keep pace with changing conditions and management needs.

Application of intensified management to meet future supply needs starts with adequate, timely inventories of the timber resource. Forest-wide timber management plans are prepared from the forest inventories. Changes take place rapidly in growing stands of timber through the application of harvesting and timber stand improvement measures, and the effects of insects, disease, and natural calamities.

The application of intensified management also requires intensive, individual stand examination by qualified silviculturists and professionals in wildlife biology, soils, geology, landscape management, economics, logging, and engineering. Both technical opportunities for increasing yields and economic returns from investments in intensified management vary widely from stand to stand and place to place depending on a variety of factors. Differences in treatment opportunities stem in part from site and stand conditions. Stocking, species composition, tree diameter distribution, and regeneration requirements also vary widely in different stands and directly affect management opportunities. In many cases the necessity of modifying timber management to enhance environmental protection and to maintain recreation, wildlife, and esthetic values increases management costs or reduces amounts of timber growth available for harvest.

The National Forest Management Act of 1976 (PL 95-588) requires a report on the reforestation and timber stand improvement backlog. The first report will be sent to Congress later in 1977. The Forest Service is updating and validating backlog needs through a special intensive silvicultural examination program. Under this program, all backlog areas are being examined and located by stand area and by productivity class and by the end of fiscal year 1978, the Forest Service will have more information on these areas.



TIMBER RESOURCE MANAGEMENT--Reforestation and Stand Improvement  
(All capital investment)

		Permanent full-time <u>man-years</u>
1976 .....	\$62,686,000	841
Transition quarter .....	(14,706,000)	
1977 .....	<u>64,656,000</u>	<u>894</u>
1978 .....	65,227,000	894
Change .....	<u>+571,000</u>	<u>- -</u>

A net increase of \$571,000 is proposed as follows with no change in permanent full-time man-years:

- (1) Increase of \$2,432,000 for reforestation.
- (2) Increase of \$1,023,000 for genetic tree improvement.
- (3) Increase of \$571,000 for the costs of the pay increase effective in October 1976 (Executive Order 11941) and for other support services.
- (4) Decrease of \$3,455,000 in timber stand improvement.

The program follows:

	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977 estimate</u>	<u>FY 1978 estimate</u>	<u>Change</u>
	(in thousands)				
Reforestation .....	\$34,635	\$5,640	\$32,990	\$35,772	+\$2,782
Timber stand improvement ...	21,805	6,910	25,284	21,937	-3,347
Genetic tree improvement ...	2,536	1,068	2,590	3,693	+1,103
Nursery expansion and develop- ment .....	<u>3,710</u>	<u>1,088</u>	<u>3,792</u>	<u>3,825</u>	<u>+33</u>
Total .....	<u>62,686</u>	<u>14,706</u>	<u>64,656</u>	<u>65,227</u>	<u>+571</u>

GOAL: To increase the growth rate and product quality of timber growing on the National Forests to the levels consistent with maintenance of environmental quality, multiple resource use objectives, and total social and economic benefits and costs.

This program emphasizes efficiency and capital intensive timber management in order to increase future timber outputs. Current outputs are valued in terms of competitive market prices. Investment would be expanded rationally as long as value expectations exceed costs after adjusting for differing times of incidence. Generally, this would lead to investing most heavily on the more productive timber growing sites and less on low productive sites. Determination of the highest potential and return on investment would be done through the use of MULTIPLOY, a new technique for analyzing investments in growing timber.

Timber stand improvement, thinning, fertilization, and reforestation are major investments in forest management. Costly treatments can only be done cost effectively on medium or high productivity sites. Other sites might also be treated but the over-riding justification would be social, environmental, or beneficial to other resource management, rather than economic.



Reforestation and timber stand improvement activities represent a major, and often essential, investment in the future of the National Forests. It is difficult both to separate benefits associated with these activities from those accruing from other sources, and to assign accurately costs which would produce a variety of benefits over a long period. However, past evaluations indicate that investment opportunities which would yield more than a 5 percent rate of return are limited. These evaluations are being updated. It is possible that expected benefit/cost relationships may have changed significantly over the past several years.

A comparison of proposed outputs follows (estimated):

	FY 1976	Transition quarter	FY 1977	FY 1978
Reforestation (acres) .....	174,684	9,900	199,624	197,290
Timber stand improvement (acres) ...	253,317	30,600	313,653	253,000
Genetic tree improvement (acres of seed orchards) .....	1,728	1,826	1,826	1,826
Nursery expansion and development (no. of nurseries) .....	11	11	12	12

The outputs of all products and services of the National Forests, including timber products, can be increased materially in the next decade at costs commensurate with benefits. The harvesting of presently standing timber, both old growth and young growth, will continue to be important for several decades; but, increasingly, harvest will consist of wood grown after 1977. For the long run, 2020 and beyond, timber growth will be very important; and available timber volume in those decades depends upon measures to increase growth taken in the 1970's and 1980's.

The proposed silvicultural measures would contribute to the long-range goal of improving the total net growth and sustainable harvest volume on the National Forests. Growth resulting from this program would also help to offset the decrease in available yield brought about by changes in land use.

#### Examples of Recent Accomplishments

Reforestation. In fiscal year 1976 reforestation accomplishments were as follows:

<u>Fund</u>	<u>Acres</u>
Forest Protection and Utilization .....	174,684
Knutson-Vandenberg Act .....	205,531
Other Federal and cooperative programs, including Manpower Development programs .....	11,368
Total accomplishment .....	391,583

In addition, to sustain a reforestation program at the magnitude necessary to meet commitments to the Congress, the following was done:

- Forest Service seed extractories processed 58,711 lbs. of tree seed.
- 110 million trees were produced in 11 Forest Service nurseries.
- 55 acres of seed orchards were established for improved seed. About 25,000 acres were planted with seedlings from improved seed in fiscal year 1976.

Timber stand improvement. An area of 253,317 acres was treated by the following cultural measures with appropriated funds in 1976:



Project (1b)

Acres

Thinning .....	151,361
Release .....	79,983
Pruning .....	1,360
Fertilizing .....	20,613
	<u>253,317</u>

Timber stand improvement was also done for the same purpose with Knutson-Vandenberg funds on the following acreage in 1976:

Acres

Thinning .....	119,990
Release .....	32,717
Pruning .....	813
Fertilizing .....	29
	<u>153,549</u>

In addition, 15,244 acres of timber stand improvement was accomplished with other Federal or cooperative funds.

Total area of accomplishment in timber stand improvement was 422,110 acres.





RECREATION USE  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$52,701,000	1,221
Transition quarter .....	(25,243,000)	
1977 .....	<u>61,011,000</u>	<u>1,361</u>
1978 .....	65,587,000	1,456
Change .....	<u>+4,576,000</u>	<u>+95</u>

An increase of \$4,576,000, with an increase of 95 permanent full-time man-years, is proposed as follows:

- (1) Administer most concessions and recreation permits to bring existing commercial recreation concessions up to recognized standards; consider the most urgent recreation permit applications and issue prospectuses for commercial recreation facilities, \$994,000.
- (2) Operation and maintenance to begin implementing National Forest off-road vehicle plans as required by E.O. 11644 and complete surveys and perform work at Forest Service maintained sites to attain the required level of public health, safety, and welfare for those sites that remain open to the public, \$1,184,000.
- (3) Planning and inventories to: initiate management planning for the Snake and Rapid Wild and Scenic Rivers; begin the Hells Canyon National Recreation Area Management Plan and 4 wilderness management plans; develop ski touring trail standards and begin identifying potential bike trails; provide partial recreation resource input and assessment to land management and project plans prior to, and during, the decision-making process; and meet legislated wilderness study requirements, \$1,029,000.
- (4) Wilderness administration to provide on-the-ground wilderness rangers for some heavily used areas to prevent damage; and implement user regulations as called for in current management plans in 20 percent of wildernesses, \$506,000.
- (5) Visitor Information Service to cover increased costs, \$179,000. Visitor demands on resource managers will be reduced by 5 percent through program emphasis.
- (6) To provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$684,000.

GOAL: Provide 213 million visitor-days of outdoor recreation, emphasizing opportunities uniquely suited to the National Forests. Maintain, as nearly as possible, the present national share of developed recreation opportunity, utilizing private sector capital financing through concession arrangements when possible. Respond to growing demand for more natural recreation opportunity by intensifying protection and management of the most critical dispersed areas.

Employ Visitor Information Service to provide 750,000 visitor-days of interpretative services at special sites to:

- (a) Increase understanding and appreciation of forest environment.
- (b) Heighten enjoyment of visit.
- (c) Reduce visitor impact on the recreation resource.



- (d) Prepare public to participate in Nation's natural resource management decisions.

Summary of Proposed Financing  
(in thousands)

	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977</u>	<u>FY 1978</u>	<u>Change</u>
Administration of concessions and recreation permits .....	\$1,777	\$856	\$3,170	\$4,178	+\$1,008
Operation and maintenance ....	41,628	18,941	48,818	50,638	+1,820
Planning and inventories .....	2,003	804	1,725	2,763	+1,038
Wilderness administration ....	3,288	1,670	3,355	3,873	+518
Visitor Information Service ..	4,005	2,972	3,943	4,135	+192
Total .....	<u>52,701</u>	<u>25,243</u>	<u>61,011</u>	<u>65,587</u>	<u>+4,576</u>

The recreation and wilderness resource system is a major component of the Forest Service program and provides goods and services to the public in many different ways.

To enable the public to enjoy these benefits safely, the Forest Service maintains the following facilities:

Developed camp and picnic family units .....	107,363
Swimming areas .....	316
Boating sites .....	900
Interpretive sites .....	499

The Service also administers permits to private individuals and groups covering:

Recreation residences .....	17,940
Winter sports areas .....	216
Organization camps .....	550
Lodges and resorts .....	370
Outfitting and guiding .....	800

Other recreation attractions of the National Forest System include:

National Recreation Areas .....	7
National Scenic Trails .....	2
Wild and Scenic Rivers .....	10
Wilderness and Primitive Areas (million acres) .....	16
Roads (miles) .....	205,000
Trails (miles) .....	97,000
Fishing streams (miles) .....	83,000
Lakes and reservoirs (million acres) .....	2.7

The Forest Service is the largest single supplier of outdoor recreation in the Nation. Use occurs throughout the 188 million acre National Forest System on lands uniquely suited to meet the physical and mental needs of a productive and urbanized society. For many, it offers the only reasonably available natural contrast to the demands of a technologically dominated home and work environment. About 213 million recreation visitor-days (RVD) are anticipated.

Recreation Use Permits

The Forest Service would administer to prescribed standards most commercial public service concessions. Other recreation special use permits to private individuals and groups would be administered to assure that safety and resource damage objectives are met.



## Project (2)

The private sector, through concession operations would provide more than 24 million RVD's use, or about 11 percent of the total on the National Forests. Public benefits calculated at a conservative \$1.15 per RVD are nearly \$28 million annually.

Private investors would provide facilities to accommodate additional use, in accordance with requirements and limitations prescribed by Forest Service land management and resource plans.

The National Forests provide the best, and often the only, opportunity for many forms of outdoor recreation, such as skiing, outfitting and guiding, and western mountain resorts. When private entrepreneurs can develop the resource, the public is relieved of the need for large investments in facilities. In previous years, projects have been delayed or effectively stopped because of court ordered delays or appeals generated by incomplete analysis. This budget would allow handling of the most urgent applications for development and initiation of critical proposals primarily on existing sites.

This funding would also allow review and adjustment of land use fees, where current fees are recognized as inappropriate.

Receipts from permits were \$6.5 million in 1976, an increase of about \$1 million over the previous year. Permitted concessions generate tax revenue for public services at all levels of government. Permit operations provide needed stability for rural communities. Ski areas planned for development will provide jobs and stability to rural communities which include significant minority populations.

Emphasis on concession administration will result in improved public safety as well as environmental control.

### Operation and Maintenance

Forest Service developed sites. Eight thousand recreation sites with a capacity of 700,000 people-at-one-time (PAOT) would be operated and maintained under this level of financing. Three thousand five hundred of these sites, with a capacity of 260,000 PAOT, would be operated at a reduced level of services to the public. One thousand sites with 100,000 PAOT capacity would be closed for all or a portion of the normal operating season because they are generally isolated and costly to operate in relation to the amount of use.

At \$1.15 per recreation visitor-day, the public benefit from Forest Service developed use would amount to \$92 million annually. Much of this use and benefit occurs independently of specific management activities as National Forests are available for, and used for, much essentially unregulated use.

Visual Resource Management. Landscape management and design services would be applied at all resource development activities. This would help to insure that commodity production is planned and administered in ways consistent with the ecological and environmental integrity of the landscapes involved. The program would allow particular attention to the most critical and controversial scenic impacts such as timber harvest, utility construction, range revegetation and road building. Less controversy, delay or project disruption should result from this effort when communicated to public groups.

Personnel most actively involved in supervising project work and members of land management planning teams would be trained to appropriate levels of Visual Resource Management (VRM).

Landscape architects would provide direct VRM consultation on all major, high-visual-impact-potential projects to meet environmental requirements and visual quality objectives.



The private sector would gain VRM assistance through availability of special Forest Service landscape management handbooks, attendance at training seminars scheduled specifically for public and industry groups, and access to audio-visual training aids or programs.

During fiscal year 1977, landscape management handbooks dealing with fire management and wildlife will be published. Handbooks on mining and timber management will be completed in fiscal year 1978.

Dispersed Recreation Use. Emphasis on those opportunities uniquely inherent on the large areas of National Forests will complement efforts of State and private suppliers of recreation services, and contribute to local economies. Dispersed recreation activities occur at the more undeveloped end of the use spectrum, and while not requiring large initial investments of capital, management is often required to prevent loss of resource productivity and degradation of experience quality. They include hunting, fishing, hiking, vehicle travel, cross-country skiing, boating and water skiing, bicycling, nature appreciation, snowmobile and trail bike use, and horseback riding, and many other activities. With this emphasis on dispersed opportunities within the National Forest System, neighboring State, local, and private suppliers of traditional developed recreation areas would have their markets enhanced. About 123 million visitor-days of dispersed recreation use (exclusive of wilderness) are expected. Additional use of 100 thousand visitor-days is made of historical and cultural sites.

Ski touring, or cross-country skiing, is a fast-growing use, which provides users with a relatively low cost winter activity. Especially when near population centers, ski touring trails provide an alternative for outdoor winter activity heretofore supplied mostly by snowmobiling. Ski touring trail standards would be developed so that in subsequent years tour routes may be located.

Unmanaged use of the nearly 6 million off-road vehicles (ORV's) could impair productivity of the National Forests, causing unacceptable degradation of water and soil resources. Enforcement of the ORV management plans in existence for all National Forests for environmental protection, safety of forest visitors, and reduction of conflicts with other valid uses will be provided. ORV restrictions of partial or total nature are imposed on about 50 million acres. Maps delineating restricted areas will be prepared and distributed, signs will be posted, and physical controls (barriers) installed. Plan enforcement, patrolling, and monitoring for plan adjustments would be provided.

Congressional designation of seven National Recreation Areas (NRA's) within the National Forests has given great impetus to recreation use in these specific areas. Management activities supported by this budget would allow the Forest Service to fulfill the responsibilities Congress assigned. Not meeting these needs would cause an impact on State and local governments in their efforts to supply auxiliary facilities and services.

The Forest Service is partially or wholly involved in management of 10 of the wild and scenic rivers designated by Congress. Visitor access and use control are the primary needs to assure protection of the streamside resources and the significant experiences such units are to provide. The proposed budget provides for the high priority requirements.

#### Planning and Inventory

The budget would allow incorporation of vitally needed recreation input into the land management planning process. The recreation resource information would improve environmental assessment procedures.





Management plans are required for the Hells Canyon NRA and the included Snake and Rapid Wild and Scenic Rivers recently designated by Congress. Also mandated by this legislation is a complete assessment of, and plan for, managing the cultural resources of Hells Canyon. These assessments and plans would be furthered with funds included in this budget. Completion of management plans for 4 wildernesses would be provided.

About 9 new wilderness studies would be completed, and 8 reviews initiated, bringing to 137 the number of studies begun out of the 315 areas for which reviews are committed. Funding would be sufficient to meet Congressionally mandated studies.

Cultural resource surveys and site inventories and evaluations would be performed in advance of earth-disturbing resource projects (E.O. 11593 and 36 CFR 800).

#### Wilderness Administration

This budget would provide for management of the 107 wildernesses and primitive areas in the National Forests. During fiscal year 1978, over 8 million people--in excess of the predictions made just two years ago--will seek the 15.8 million acres of fragile environments to re-create themselves from the pace of today's life styles. Without sufficient management, these resources are degraded, even destroyed, and the values unique to wilderness diminish. The reaction of most wilderness users is to call for even more acreages to be designated as wilderness, thereby lessening the capabilities of the National Forests to furnish a full array of commodities and amenities needed. Paradoxically, the poorer the job of management, the greater the public desire for additional wilderness. This budget would permit increased use of on-the-ground wilderness rangers in some heavily used units to contact users and gain proper use and protection for the irreplaceable environments. With a value of over \$11 per visitor-day, the total benefit would exceed \$91 million.

#### Visitor Information Service

The Visitor Information Service (VIS) is the Forest Service on-the-ground visitor orientation and interpretive program. The VIS program produced about 78.6 million National Forest visitor contacts in 1975--21,361,000 at developed VIS sites and 57,300,000 interpretive program contacts at other than developed VIS sites; e.g. campgrounds.

It is in operation at hundreds of interpretive locations, including 499 VIS sites on the National Forests. The proposed budget would provide for the highest priorities from among facilities in a serious state of deterioration and obsolescence, including buildings, interpretive exhibits, nature trails and other improvements. Some of the older interpretive facilities would update their story presentations to respond to changing public concerns for forest resource protection and use and management. Currently about 5-10 cents per visitor contact is being expended in operation and maintenance.

With a fixed land base and growing recreation demand there is need for higher intensity management that lessens resource use impact by encouraging dispersed use and by discouraging costly littering, pollution and vandalism. Family safety in the forest is a growing concern to recreation managers.

This budget would place emphasis in the following areas:

- (a) Assisting the forest visitor to enjoy the resource opportunity.
- (b) Easing the impact on the recreation resource and administration costs.
- (c) Preparing the public for participation in critical natural resource management decision-making.



212,650,000 Total Visitor Days

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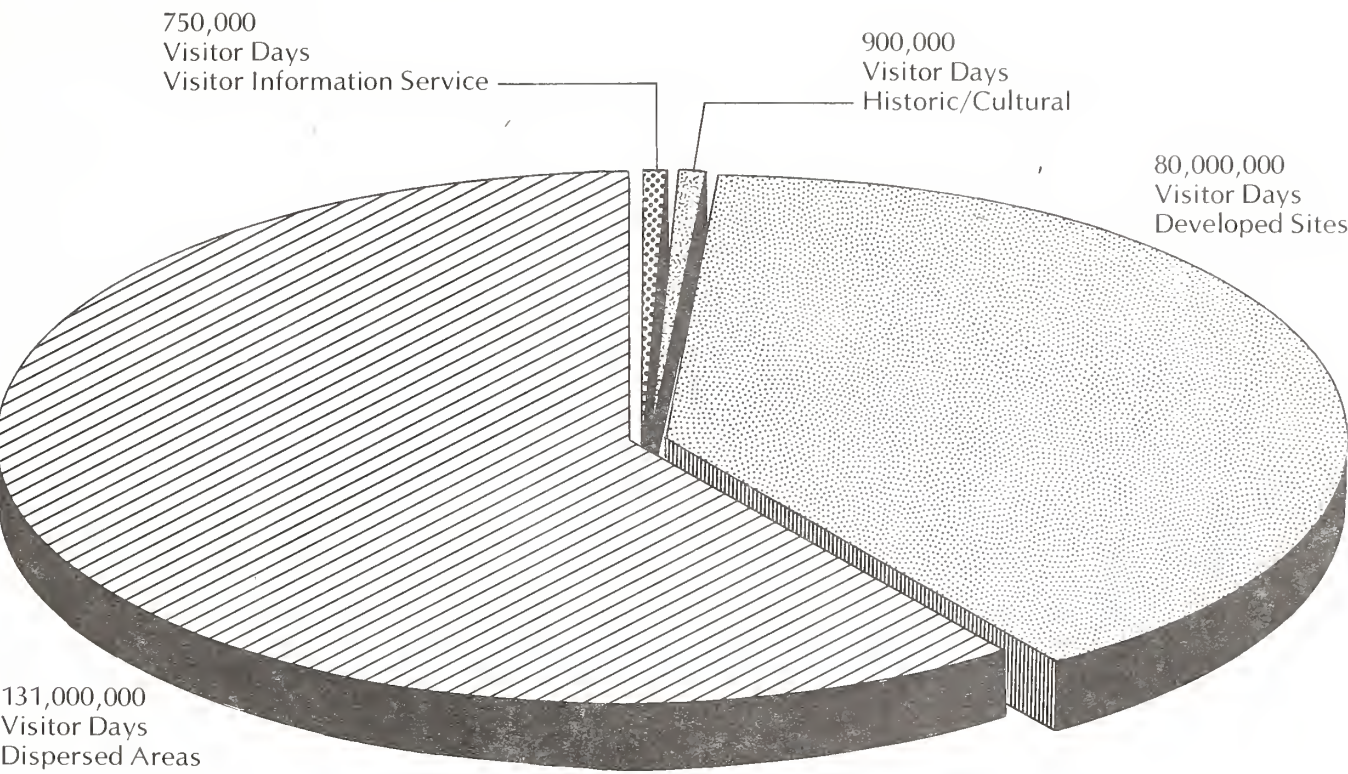
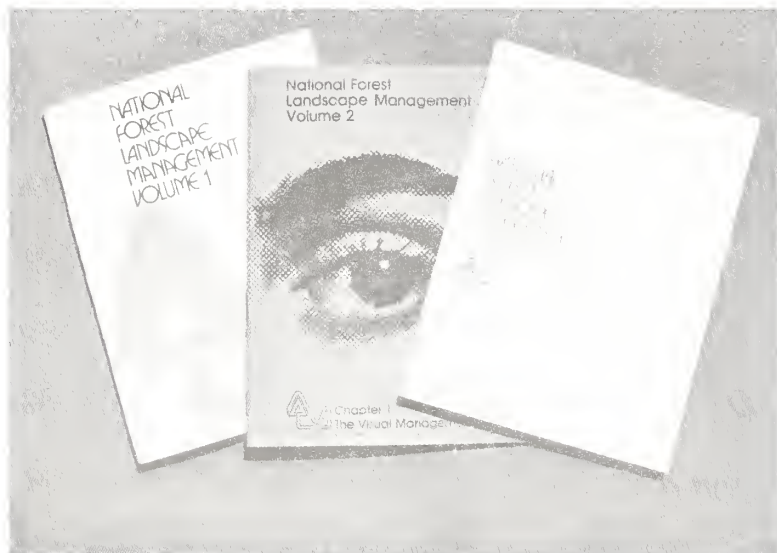


Figure 2-1

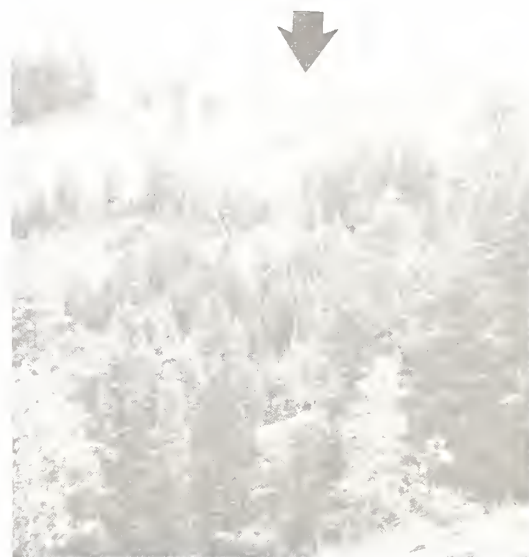


## Examples of the Forest Service Visual Resource Management Program

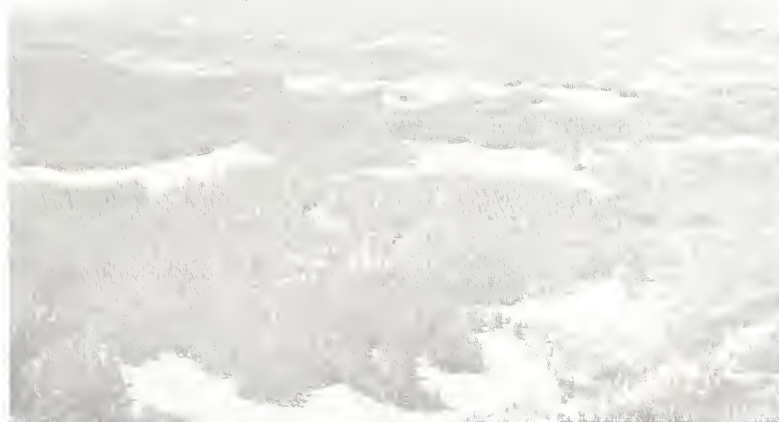
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The private sector will gain visual resource management assistance through availability of training seminars and Forest Service Handbooks.



Utilities (a power line designed for low visual impact).



Timber harvesting (the clear-cut patches across the photo's center were designed to blend with their surroundings).





Some Examples of Dispersed Recreation on the National Forests

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Figure 2-3





## Some Examples of Dispersed Recreation on the National Forests

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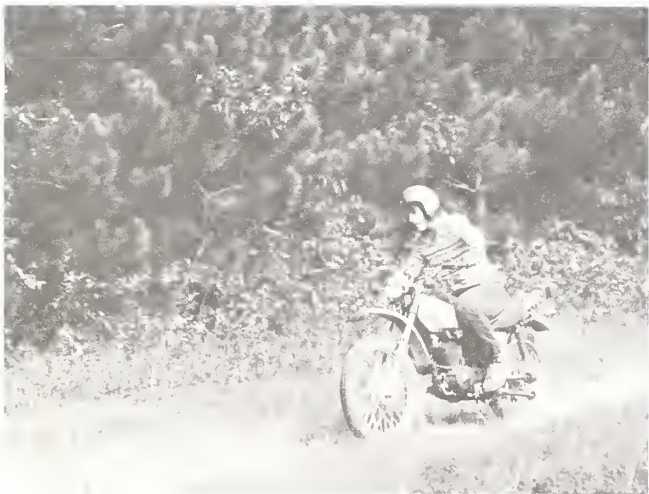


Figure 2-4





The National Forest visitor's experience . . .

. . . is enhanced through interpretive services.



Trails . . . Essential National Forest  
Recreation Facilities.







Many National Forest facilities are old and worn out . . .



... they must be rehabilitated or replaced to ensure continued safe use by the public.



Littering, vandalism and resource damage must be reduced through more intensive recreation management of the National Forests.



## Project (3)

WILDLIFE AND FISH HABITAT MANAGEMENT

		Permanent full-time man-years
1976 .....	\$11,209,000	331
Transition quarter .....	(3,225,000)	
1977 .....	13,931,000	384
1978 .....	16,000,000	426
Change .....	+2,069,000	+42

An increase of \$2,069,000, with an increase of 42 permanent full-time man-years, is proposed as follows:

- (1) For cooperative wildlife and fish habitat restoration and development, and coordination with other activities to comply with the Endangered Species Act, \$1,832,000.
- (2) To provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$237,000.

The planned levels of financing follow (in thousands of dollars):

	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977 estimate</u>	<u>FY 1978 estimate</u>	<u>Change</u>
Coordination and cooperation (internal and external) .....	\$5,909	\$1,760	\$6,956	\$6,997	+\$41
Habitat restoration and develop- ment .....	3,370	940	4,342	4,368	+26
Endangered and other threatened species .....	1,930	525	2,633	4,635	+2,002
Total .....	<u>11,209</u>	<u>3,225</u>	<u>13,931</u>	<u>16,000</u>	<u>+2,069</u>
Operation and maintenance .....	7,453	2,180	9,062	10,705	+1,643
Capital investment .....	3,756	1,045	4,869	5,295	+426
Total .....	<u>11,209</u>	<u>3,225</u>	<u>13,931</u>	<u>16,000</u>	<u>+2,069</u>

GOAL: To improve and expand management programs to enhance fish and wildlife populations on public lands administered by the Forest Service, as demanded by consumptive and nonconsumptive users. Provide for species diversity and greater wildlife and fish populations through substantive increase in habitat management.

The fiscal year 1978 program would provide the following outputs:

Habitat improvement -- endangered species ..... 32,092 acres  
Habitat improvement -- other species ..... 70,626 acres

Program Description

The Forest Service administers the land and water upon which about one-seventh of the fish and wildlife-oriented recreation of the United States is generated. There are over 45 million acres of big game range, 43 million acres of small game range, plus 83,000 miles of fresh water streams, 1.8 million acres of natural lakes and 880,000 acres of reservoirs. All of these acres provide habitat in some form and condition for many species of fish and wildlife. Habitat improvement projects are an important part of multiple use management of these lands.





### Project (3)

In compliance with the Endangered Species Act of 1973 (87 Stat. 884) 50 endangered species have been identified on these public lands. Planning and subsequent work programs under this Act have just begun.

Although several small programs are in effect, comprehensive management programs are evolving in cooperation with the Fish and Wildlife Service of the Department of the Interior and the States.

Programs are concerned basically with improving the wildlife and fish habitat needs for wild animal existence.

The planned programs include such activities as the construction of fish ladders at dams or other barriers to provide for anadromous fish migration; installation of fish screens at water diversions; planting vegetative cover along streambanks to improve cover and reduce erosion; construction of fish spawning channels; fencing stream bottoms to protect riparian vegetation; controlling undesirable fish populations; and construction and maintenance of fishing lakes.

Example: The Forest Service has a unique opportunity to demonstrate leadership in habitat improvement with increases in salmon spawning and rearing habitat.

The salmon fishery of Alaska has international implications (protein supply) since the Japanese and Koreans fish for United States salmon. Increasing the salmon production on National Forests in Alaska aids in sustaining the economy of the State by providing capital and jobs in the local area.

The annual value of increased spawning and rearing habitat based on optimum utilization by salmonids is \$4,800,000 against an initial investment of \$897,000. Benefit/cost analysis over a 20-year period, including minimal maintenance costs, yields a benefit/cost ratio of 18:1.

Activities to improve upland habitat include prescribed burning to improve deer and elk winter range, turkey and quail habitat; development of wildlife openings and waterholes; construction of den, nest, perch, and roost structures for squirrels, wood ducks, eagles, and songbirds; seeding and planting forest openings and logging roads.

Example: To cope with declining elk herds, the Forest Service and the Idaho Fish and Game Department have jointly proposed a 10-year management program. Objectives of the program are to improve habitat conditions for elk by improving seral brushfields through prescribed burning, precommercial thinning and a slashing and burning to meet the basic forage requirements of elk.

Improvement of wetland habitat includes the development of potholes, food plantings, nesting cover, nest structures, and greentree reservoirs to benefit waterfowl, other bird species, and aquatic mammals. Many of the above habitat improvement activities relate directly to the protection and management of threatened and endangered species.

Example: There is a need to provide increased protection and management to the environmental needs of the 50 endangered and other threatened species found on lands administered by the Forest Service.



### Project (3)

Among opportunities existing to enhance habitat for threatened and endangered wildlife and fish species is the expansion of studies to determine the habitat requirements, distribution and future management direction for grizzly bear populations in Montana and Wyoming.

Expansion of the studies for the grizzly bear within this program will directly benefit the estimated 800 surviving bears and provide needed management direction to insuring a perpetuation of the species.

#### Examples of Accomplishments

A summary of total wildlife and fish habitat acres improved during fiscal year 1975 (latest figures available) follows:

Food and cover development .....	2,698,860
Fish stream improvement .....	4,938
Fish lake improvement .....	4,160
Wetland improvement .....	36,040

Also, 7,855,000 acres of wildlife habitat were improved through coordination with other land resource uses and development.

Additional examples are:

The Apache-Sitgreaves National Forest, in cooperation with the Arizona Game and Fish Department, completed two years of preparation in finalizing a comprehensive wetlands management program plan. The objective of the plan is to improve the quality of the wetlands ecosystem on the forest through a 20-year comprehensive management program.

The joint planning by the Forest Service and the State conservation departments for comprehensive fish and wildlife habitat programs continued in 1976. By the end of the calendar year, a total of 34 State-Forest Service plans will have been completed. This joint planning is paying off. The plans provide useful information for land managers as they make specific plans for the wildlife and fish habitat projects that will be carried out with the funds in this budget request.



RANGELAND MANAGEMENT

		Permanent full-time man-years
1976 .....	\$18,747,000	521
Transition quarter .....	(5,527,000)	
1977 .....	25,454,000	581
1978 .....	22,536,000	581
Change .....	-2,918,000	-

A net decrease of \$2,918,000 is proposed as follows:

- (1) Increase of \$82,000 to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.
- (2) Decrease of \$3,000,000 in program level.

There is included elsewhere in this budget an increase of \$4,500,000 under a proposed new appropriation, Rangeland Improvements, to be used for range revegetation, rehabilitation, construction, maintenance, and protection of improvements, control of rodents, and eradication of poisonous and noxious plants on National Forest lands. The funds for this new appropriation are to be derived from grazing fees as authorized by Section 401(b)(1) of PL 94-579, October 21, 1976. The decrease in program level for this account is more than offset by the increase in the new account.

No change is proposed in permanent full-time man-years.

	<u>FY 1976</u>	<u>Transition quarter</u> (in thousands)	<u>FY 1977 estimate</u>	<u>FY 1978 estimate</u>	<u>Change</u>
Operation and maintenance ..	\$14,930	\$4,099	\$19,300	\$19,531	+\$231
Capital investment .....	3,817	1,428	6,154	3,005	-3,149
Total .....	18,747	5,527	25,454	22,536	-2,918

GOAL: To provide grazing for livestock on National Forest System lands without impairing land productivity and at a cost which is competitive with that on non-Federal rangelands. Achievement of the goal by the year 2000 is based on a schedule with gradually increasing outputs.

Range objectives are:

- (1) Provide for increased range grazing on the National Forest System which will contribute substantially toward meeting world food needs and the conservation of fossil fuel energy.
- (2) Restore rangelands to satisfactory conditions.
- (3) Benefit local and regional ranching communities through the permitted grazing use of National Forest System land, including the promotion and demonstration of improved management and conservation to serve as examples for adjacent landowners.

Related objectives are:

- (1) Protect endangered and threatened plants and animals.
- (2) Protect and manage wild horses and burros.
- (3) Preserve sites of historical value.

THE UNIVERSITY OF CHICAGO

1950-1951

THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY  
RESEARCH REPORT NO. 100  
BY  
J. H. GOLDSTEIN  
AND  
R. L. BARKER  
PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS  
CHICAGO, ILLINOIS  
1951

- (4) Maintain the natural scenic values of the range.

Specific long-term objectives of rangeland management are:

- (1) Production. Sustained annual production of between 18.0 and 20.4 million animal unit months of livestock grazing by the year 2000.
- (2) Environment. Correct unsatisfactory ecological conditions on 15.3 million acres of rangeland. Techniques used will include investments in range development and improved livestock management where cost-effective, or reduction or elimination of livestock grazing where grazing is not cost-effective.

#### On-going Programs

The National Forest System Rangeland Management Program encompasses approximately 12,000 range allotments scattered throughout 39 States. Some 16,000 ranchers graze more than 1.4 million cattle and 1.6 million sheep on these lands under paid permit for an annual total of approximately 11.3 million animal unit months of grazing. The 12,000 allotments covering 100 million acres of National Forest System provide grazing essential to the operation of ranches owned by Forest Service permittees. Without the National Forest System grazing, many of these ranches would not be viable economic ranching units.

#### Expanding Program

An expanding national need for grazing must be met efficiently. This will be accomplished by investing in the most productive ranges on the National Forests and Grasslands. On some allotments, intensity of management will increase in order to expand production while on others, investments in management and range improvements will be decreased in order to achieve program effectiveness.

A program to evaluate the range program was begun in 1976. Results of this validation program will be used to modify management in other areas and improve the overall efficiency of the range program.

Targets. Key output targets for the range program are animal unit months of grazing produced and acres of land defined as backlog in the Resources Planning Act. To reach the proposed output level of between 18.0 and 20.4 million animal unit months by the year 2000, an increasing target associated with an increased range program has been adopted. The target for fiscal year 1978 is set at 11.4 million AUM's. As part of the effort to correct range condition on all of the 7.7 million acres identified as the Resources Planning Act backlog for range which will be grazed in the year 2000, about 230,000 acres will be treated. The treatments proposed include cultural practices such as range seeding and fertilization applied on high productivity lands that are in unsatisfactory condition. Efficient grazing systems will be applied on existing allotments having unsatisfactory condition range which does not warrant cultural investments.

Issues. The expanding range program as developed in the Resources Planning Act recommended program for National Forest System land is based upon a predicted share of grazing required from National Forest System land. A cost-analysis has indicated competitive grazing opportunities exist on National Forest System land when they are considered as a part of the total productive national range resource base. Range grazing demand from all ranges in the United States is estimated to be 320 million animal unit months by the year 2000, up from a level of 213 million in 1970. The analysis indicates that, based upon land production potentials and environmental considerations, the National Forest System lands should produce 18.0 to 20.4 million animal unit months by the year 2000, compared to the 11.3 million of 1976. However, larger investments will not yield returns competitive with investments in other sectors of the economy based on the direct returns through grazing fees. In other





words, investment levels greater than proposed here would have costs in excess of benefits unless the secondary benefits can be demonstrated to be sufficiently greater than secondary costs. Such demonstration is not likely.

Issues being examined by the Forest Service with regard to the National Forest System range programs include:

- (1) The role of National Forest System lands in meeting the Nation's range grazing demand.
- (2) The costs associated with red meat production and costs for environmental protection.
- (3) Indicated regional shifts in the grazing program on National Forest System land.

Recent and planned accomplishments are:

	<u>1976</u>	<u>Transition quarter</u>	<u>1977</u>	<u>1978</u>
Improved management maintained to date (No. of allotments) .....	6,982	6,982	7,401	7,884
Improved management started (No. of allotments) .....	419	- -	483	480
Rangeland in low ecological condition, feasible for restoration and livestock grazing brought under improved management to date (thousand acres) .....	2,956	3,054	3,710	3,940
Range revegetated (thousand acres) .....	75	20	115	49
Animal unit months of grazing produced (millions) (production units) <u>1/</u> .....	11.3	5.3	11.4	11.4

-----  
1/ Units of Measure. Two units of measure are commonly used in the discussion of animal use months. The first is the production unit which is used in this discussion and in the Resources Planning Act. The production unit measures the grazing needed for one 1,000 pound animal for one month. The second measure is the statistical or standard unit which has been traditionally used in budget presentations. The statistical unit measures the grazing needed for the mother animal only. To convert the statistical to the production unit a multiplier of 1.318 is used for cattle and horses and 1.5 is used for sheep and goats.



SOIL AND WATER MANAGEMENT

		Permanent full-time man-years
1976 .....	\$19,211,000	493
Transition quarter .....	(5,492,000)	
1977 .....	20,193,000	523
1978 .....	22,310,000	565
Change .....	+2,117,000	+42

An increase of \$2,117,000, with an increase of 42 permanent full-time man-years, is proposed as follows:

- (1) For costs associated with providing scientific soil and water knowledge in support of timber, range, recreation, and wildlife and fish activities, \$1,882,000.
- (2) To provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$235,000.

Program for fiscal year 1978, and previous periods follows:

	1976	Transition quarter	1977 estimate	1978 estimate	Change
	(in thousands)				
Soil and water science for management support .....	\$13,698	\$4,244	\$17,168	\$19,273	+\$2,105
Watershed restoration and improvement .....	3,817	748	1,910	1,918	+8
Wild and scenic rivers studies ...	500	150	465	467	+2
Soil stabilization and reservoir protection related to projects of water resource development agencies .....	1,196	350	650	652	+2
Total .....	19,211	5,492	20,193	22,310	+2,117
Operation and maintenance .....	12,143	3,757	15,058	16,849	+1,791
Capital investment .....	7,068	1,735	5,135	5,461	+326
Total .....	19,211	5,492	20,193	22,310	+2,117

GOAL: To assist in the maintenance and enhancement of the environmental quality of National Forests through the application of scientific geology, hydrology, and soils knowledge to resource protection and development programs.

Program Description

The objectives of soil and water management are accomplished primarily by providing Forest Service land managers engaged in the various land management activities the scientific advice and technical direction to help in accomplishing land management programs. These services include:

- (1) Surveillance and monitoring activities to fulfill mandatory requirements for maintaining the quality of natural waters.
- (2) Providing knowledge of soil and water conditions and trends on which to base management decisions.



- (3) Conducting inventories and surveys to acquire basic data on soil and water resources and interpreting data for short- and long-term planning.
- (4) Identifying water needs for National Forest purposes in areas where State water adjudication proceedings are on-going.

The need for these services parallels the intensity of the various land management activities that are served by the program. The fiscal year 1978 funding level would provide services to most of the current land management activities. The technical support provided to land management planning as well as to resource plans dealing with timber production, flood plain management, water yield improvement, recreation activities and facilities, range improvement and transportation systems, assures that maximum attention would be given to maintaining or enhancing the soil and water productivity potentials. As the demands for timber and forage production and recreation opportunities increase, the pressure increases to move onto the more fragile National Forest System areas. The level of resource use and activity on these areas must be in harmony with the provisions made for quality control of the soil and water resources and natural beauty. A comprehensive understanding of the basic soil, geologic, and hydrologic characteristics of each area is a significant factor in sound resource management.

The soil and water management program includes restoration of degraded watershed lands, caused by man's activities or natural disasters, to alleviate flooding, improve the quality and quantity of water, and restore site productivity.

The backlog of degraded watershed lands needing cultural treatment amounts to over eight million acres. The direct restoration work to be done in fiscal year 1978 includes maintenance of past work to assure project success. Planned activities during fiscal year 1978 would restore approximately 45,000 acres, through capital investment work for initial treatment. Maintenance of existing measures of approximately 135 projects involving over 8,000 acres would also be accomplished.

The benefits from the soil and water program accrue both onsite and offsite. The onsite benefits are primarily related to maintenance and/or enhancement of the soil and water resources. A sustained yield of quality products from the National Forests is dependent on the maintenance of soil and water productivity.

Offsite benefits from the program accrue to the downstream user of water flowing from National Forest lands. The 390.4 million acre-feet of high quality water produced from the National Forests is an example of the importance of water in the National Forest programs. Costs for water treatment and maintenance of irrigation equipment are reduced, and the useful life of reservoirs is extended. In addition, fishery and wildlife values are enhanced and dangers from floods are minimized.

For fiscal year 1978, environmental quality protection would be assured by providing soil and water services on over 56 million acres of National Forest System lands. Included are about 23 million acres of soil resource inventory and 12 million acres of hydrologic surveys.

Another portion of the soil and water program is concerned with water use requirements and availability.

Extreme demands are being put upon available water supplies, particularly in the West. The Congress and the courts have determined that the United States has a right to reasonable use of water on National Forests reserved from the public domain except those waters appropriated before the National Forests were created. Efforts are underway to obtain sufficient quantities of water in accordance with legal authority for the administration and development of the National Forest System. This project on a watershed basis includes:



## Project (5)

- (1) An inventory of present and foreseeable needs.
- (2) A determination of water availability.
- (3) An assessment of the potential for increasing yields in water-short areas.
- (4) Action to secure the water needed for National Forest purposes.

Continuing this program results in considerable public benefit. Identifying the need and quantifying the amount of water for National Forest purposes must be done in a timely manner since recapturing water that has been put to beneficial use downstream is a complex, controversial, and costly action.

The western States have indicated their interest in having the Forest Service complete this program as rapidly as possible. Through fiscal year 1977 the field inventory of Forest Service water uses will be essentially complete. The fiscal year 1978 program would provide for determining instream water needs on about 950 miles of stream, and the determination of water rights needs on 810 watersheds.

Additional work is developing due to adjudication proceedings in some western States. Increasing judicial and administrative action in water rights is anticipated, both on lands reserved from the public domain and on acquired lands, over the next several years.

An additional portion of the soil and water program is concerned with the environmental analysis of proposed water resource developments and the liaison with the proposing agency. During fiscal year 1978 environmental analysis work and/or liaison would be performed at over 500 water development projects.

Essential land treatment and related measures are planned at small watershed projects authorized by PL-566 and PL-534, and at other major reservoir projects. Treatment measures would include soil stabilization and vegetation management to improve water quality and quantity. Also, in order to provide for public safety and user enjoyment of reservoir areas, debris and stump removal would be accomplished on about 15,000 acres.

Wild and Scenic Rivers Act (PL 90-542, as amended). The purpose of this activity is to carry out comprehensive studies of rivers designated as potential additions to the National Wild and Scenic Rivers System. This 1968 Act designated 27 rivers for detailed study as potential additions to the National System. The Act was amended by PL 93-621, January 3, 1975, to add 29 rivers for study. The Forest Service is the lead agency for the Department of Agriculture's river study work on nine of the original 27 study rivers and is lead agency for 13 of the additional 29 and will provide joint leadership on three.

All studies are cooperative efforts with States, Federal agencies, and interested groups and individuals. The study work provides for the employment of local people to collect resource data and data on the resource use and capability. The program effort during fiscal year 1978 would essentially complete work on the original nine studies and on ten of the additional rivers under Forest Service leadership. In addition, work would be done on the remaining river studies with a target date for completion early in fiscal year 1979.

### Examples of Recent Accomplishments

Soil resource inventories were conducted on 16.5 million acres. Geologic overview inventories were conducted on 4 million acres.

Soil and water resource protection requirements and design services were provided for timber sale layout for 10.3 billion board feet of timber sold.

Work is continuing on instream flow determinations that are being made for adjudications in the following States: California, Washington, Oregon, Nevada, Idaho, Montana, Utah, New Mexico, Arizona, and Wyoming.





Project (5)

Water monitoring was done at more than 3,000 sites to establish baseline quality information, compliance with water quality standards, and locate source and cause of pollution or evaluate management mitigation measures.

Treatment to aid in sustaining favorable watershed conditions on lands damaged by wildfire was applied to 9,000 acres.



MINERALS AREA MANAGEMENT  
(All operation and maintenance)

Project (6)

		<u>Permanent full-time man-years</u>
1976 .....	\$6,786,000	243
Transition quarter .....	(2,137,000)	
1977 ..... 1/	8,358,000	238
1978 .....	10,360,000	285
Change .....	+2,002,000	+47

1/ Excludes proposed supplemental of \$975,000.

An increase of \$2,002,000, with an increase of 47 permanent full-time man-years, is proposed as follows:

- (1) For impacts of energy resource activities, including environmental analysis and planning, \$1,667,000. (Fiscal year 1977 supplemental of \$975,000 is being proposed.)
- (2) For surface restoration and administration of lands valuable for metals resources, \$150,000.
- (3) For administration of activities of common varieties production, fertilizers, and other chemical resources, and activities associated with mineral reservation and rights outstanding, \$85,000.
- (4) To provide for costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$100,000.

GOAL: Administer pertinent laws and regulations to permit the uninterrupted flow of National Forest System minerals to the Nation's economy while insuring adequate protection of the surface resources and the environment; eliminate unauthorized uses of Federal land which may be occupied under the guise of mining laws for purposes unrelated to mineral development.

Program Description

No other National Forest program has experienced the impact of rapid expansion as has minerals area management. National Forest and other public lands are playing a key role in the development of energy and mineral resources. Minerals exploration, leasing, and development activities have taxed the Forest Service's ability to respond. Without a positive, high-quality program, the Forest Service can be placed in the position of delaying development of nationally needed energy sources. The Department of the Interior and industry are, in some cases, delaying development pending completion of needed environmental analyses by the Forest Service. In some instances, industry has postponed or cancelled development because of the inability to respond in a timely manner.

The Forest Service's responsibility is that of protecting surface resources and coordinating uses on National Forest System lands. The Department of the Interior, having the basic responsibility for minerals on Federal lands, refers to the Forest Service all oil, natural gas, and phosphate lease applications covering National Forest System lands reserved from the public domain for recommendations on protecting surface resources and the environment. This is by Interdepartmental agreement. On acquired lands, and in cases involving coal and geothermal steam, Interior must, by law, obtain Forest Service consent to lease and must include stipulations recommended by the Forest Service. Interior and the Forest Service must evaluate and approve all operating plans for exploration, development, and reclamation proposed by lessees.

The Forest Service must evaluate and coordinate all proposed leases and operating plans for each specific site with other resource uses. Processing of applications must conform to applicable laws and regulations, such as the National Environmental



Policy Act. Those proposals having significant environmental impact or controversy require that an environmental impact statement be prepared and processed as prescribed by the law.

The National Forests contain 17 million acres of lands with geothermal energy development potential. They also contain the largest undeveloped oil and gas potential in the lower 48 States. The depth of the basins, ruggedness of topography, and vegetative cover have prevented exploration and development until now. It is conservatively estimated that there are 12 billion tons of stripable publicly-owned coal under the National Forests. A recent discovery of uranium on National Forest land in New Mexico appears capable of producing a significant share of the Nation's requirement for that energy-producing mineral.

Receipts and royalties from these activities are also significant to the Nation's treasury. In 1975, the 27 million acres of acquired lands alone in the National Forest System (as opposed to the additional 160 million acres of National Forest reserved from the public domain) generated \$12 million in mineral receipts to the Treasury.

Some isolated examples on both acquired and public domain lands are as follows:

- In the "Missouri Lead Belt," the Mark Twain National Forest produced \$6.3 million in royalties in 1975.
- Oil and gas royalty from the Little Missouri National Grassland in North Dakota in 1975 was \$1.96 million.
- Royalties on phosphate mined on the Caribou National Forest in Idaho in 1975 was \$1.0 million.

We can expect royalty earnings to increase proportionately with energy-related activity on National Forest lands. Two examples of potential earnings:

- On National Forests in Utah there are 40 Energy Minerals Allocation Resource Systems (EMARS) under nomination for study. Should these studies be completed and mining initiated, the areas could generate royalties of \$40 million annually.
- The Ashland Division of the Custer National Forest in Montana has five EMARS nomination areas that could generate a royalty of \$50 million per year.

<u>Activities</u>	<u>1976</u>	<u>Transition quarter</u>	<u>1977</u>	<u>1978</u>	<u>Change</u>
		(in thousands)			
Metals reserves administration, protection and restoration of surface resources .....	\$3,597	\$1,170	\$3,920	\$4,116	+\$196
Energy resources administration and development, including environmental analysis and land management planning .....	2,550	785	3,325 <sup>1/</sup>	5,029	+1,704
Surface resource protection and administration of lands producing chemical resources, common varieties of minerals, and lands with mineral reservation and rights outstanding	639	182	1,113	1,215	+102
Total .....	6,786	2,137	8,358	10,360	+2,002

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1/ Excludes proposed supplemental of \$975 thousand.



Recent Accomplishments and Activities

In the last 10 months of fiscal year 1976, the Forest Service received more than 3,000 proposed operating plans or notices of intention to operate. Each of the filings necessitate a site-specific analysis in order to determine whether or not significant surface resource impacts were prospective. Based on a finding of significant impacts, more than 500 operating plans were required to be filed with the Forest Service. As of the end of fiscal year 1976, about 500 operating plans had been approved by Forest Service administrators.

In addition, a program of participation with the Department of the Interior and other agencies was initiated in the preparation of environmental impact statements for the development of coal, oil and gas, phosphate and geothermal resources. Initial steps were taken to participate in regional coal studies and environmental impact statements proposed by the Department of the Interior to meet coal leasing requirements. A supplemental in fiscal year 1977 is being proposed to finance this effort.

Notes, Observations and Analysis

In the early morning of April 10, 1915, the observer began observations at 5,000 ft. above sea level. The weather was clear and the visibility was good. The temperature was 60°F. The wind was light and variable. The humidity was 60%. The barometer was 30.0 in. Hg. The observer noted that the air was very dry and that the ground was very dry. The vegetation was sparse and consisted of low shrubs and grasses. The soil was sandy and light-colored. The observer also noted that the air was very clear and that the sky was a deep blue. The sun was visible and the shadows were long and dark. The observer concluded that the climate was very dry and that the vegetation was very sparse.

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## Project (7)

FOREST FIRE PROTECTION

		Permanent full-time man-years
1976 .....	\$39,544,000	904
Transition quarter .....	(12,895,000)	
1977 .....	44,387,000	992
1978 .....	44,644,000	992
Change .....	+257,000	- -

An increase of \$257,000 is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, with no change in permanent full-time man-years.

	1976	Transition quarter	1977	1978	Change
	(in thousands)				
Operations:					
Administration:					
Fire prevention .....	\$8,380	\$2,572	\$9,054	\$9,115	+\$61
Fire detection .....	3,433	1,053	3,650	3,675	+25
Fire attack forces .....	17,922	5,489	19,753	19,890	+137
Aviation operation and air- craft .....	4,923	1,945	4,941	4,975	+34
Inventory, plans and analysis	- -	- -	442	442	- -
Maintenance of capital invest- ment .....	- -	- -	- -	605	+605
Capital Investments:					
Fuel reduction .....	3,350	1,300	3,708	3,063	-645
Fuelbreak construction .....	1,000	406	2,263	2,263	- -
Equipment development and testing .....	536	130	576	616	+40
Total .....	39,544	12,895	44,387	44,644	+257
Operation and maintenance .....	34,658	11,059	37,840	38,702	+862
Capital investment .....	4,886	1,836	6,547	5,942	-605
Total .....	39,544	12,895	44,387	44,644	+257

GOAL: Through land use plans and fire management plans, protect people, property and resources from wildfire. Using fire by prescription, increase resource productivity.

Fire protection goals to be reached by 1990 as indicated in the Renewable Resources Program are:

- (1) Reduce burned acreage from the current 5-year average of 208,000 acres to 180,000 acres.
- (2) Reduce man-caused fires from the current 5-year average of 6,990 to 5,900.
- (3) Control 95 percent or more of the fires that occur to 10 acres or less.
- (4) Accomplish fuel reduction or fuelbreak construction to 500,000 acres annually.
- (5) Eliminate the logging slash backlog which is currently about 1,200,000 acres.
- (6) Provide for periodic maintenance on areas receiving fuel treatment to retain a low flammability.
- (7) Improve the safety and efficiency of aviation operations.



## Project (7)

These goals are being reviewed to determine whether or not they can be achieved at a cost which is commensurate with the values involved. The goals will be modified as necessary. The review is scheduled for completion in March 1977.

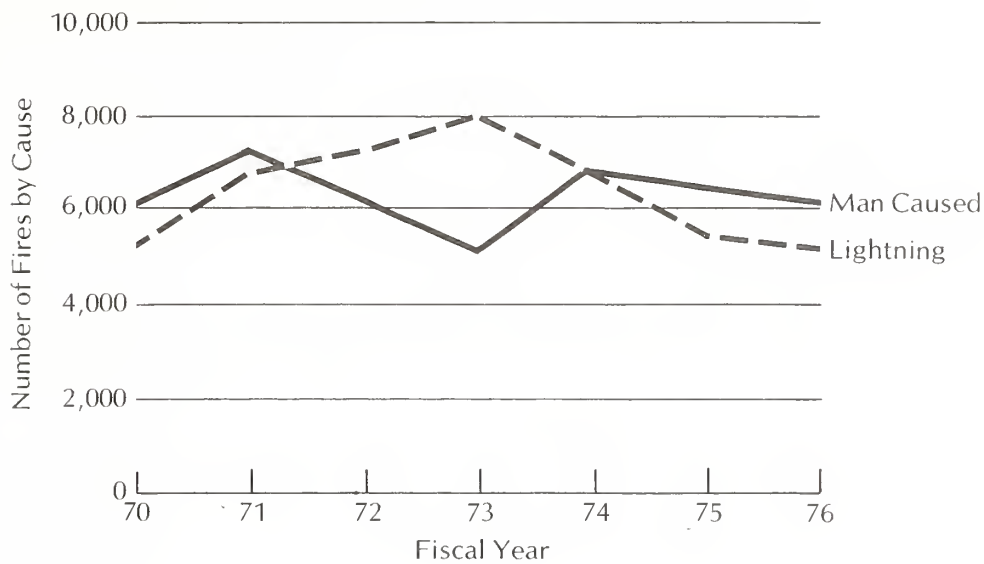
This program, through implementation of the National Fire Plan and National Aviation Plan, provides management of fire for beneficial effects and for resource protection on 180 million acres of National Forest lands and provides assistance in the protection of an additional 22 million acres. The program is designed to lower the flammability of forest and rangelands through accelerated fuel modification and expanded fire prevention.

The quality of the environment is improved through scientific smoke management and application of sound fire management practices, including the prescribed use of fire. The increasing value of public land, increased value of improvements, and increasing year around use by the public, is increasing the importance of protecting public lands from wildfire.

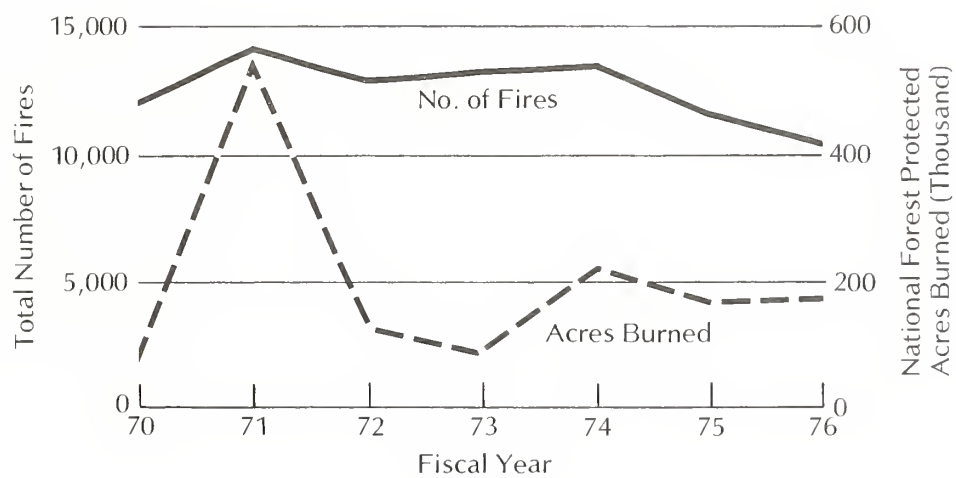
Annual losses from forest fire vary according to weather, forest vegetation conditions, fire occurrence and firefighting preparedness.

The threat of fire to the timber resource becomes more critical as more areas are harvested, public access is expanded when roads are built into remote areas, and intensive management is applied to more forested areas. Protection benefits the timber resource and thusly the lumber and home building industries.





Number of Lightning  
and Man Caused  
Fires



Total Number of Fires  
and National Forest  
Protected Acres  
Burned



GENERAL LAND MANAGEMENT

Project (8)

		Permanent full-time man-years <u>1/</u>
1976 .....	\$31,392,000	786
Transition quarter .....	(6,201,000)	
1977 .....	<u>36,536,000</u>	<u>813</u>
1978 .....	40,643,000	872
Change .....	<u>+4,107,000</u>	<u>+59</u>

An increase of \$4,107,000, with an increase of 59 permanent full-time man-years, is proposed as follows:

- (1) Increase for marking land lines and monuments, \$929,000.
- (2) Increase of \$956,000 for geometronics products under the current programing procedures.
- (3) Increase for maintenance of fire and general purpose facilities, including communications, required to maintain health and safety, and protect capital investment, \$881,000.
- (4) Increase to improve the standards of administration of special uses and allow timely handling of new applications, \$155,000.
- (5) To reimburse the Employees' Compensation Fund, \$894,000 increase.
- (6) To provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$436,000.
- (7) Decrease of \$144,000 in the land classification program.

The program follows:

	<u>1976</u>	<u>Transition quarter</u>	<u>1977 estimate</u>	<u>1978 estimate</u>	<u>Change</u>
	(in thousands)				
(1) Land classification .....	\$909	\$239	\$929	\$785	-\$144
(2) Land exchange .....	4,249	723	3,784	3,838	+54
(3) Land status records and cadastral engineering (land line location) .....	5,548	862	6,106	7,130	+1,024
(4) Geometronics .....	1,497	239	2,792	3,843	+1,051
(5) Maintenance of improvements for fire and general pur- poses (including communi- cations) .....	10,968	3,166	12,670	13,689	+1,019
(6) Special uses--non-recreation	4,890	972	6,009	6,218	+209
(7) Payments to Employees' Compensation Fund .....	3,331	- -	4,246	5,140	+894
Total .....	<u>31,392</u>	<u>6,201</u>	<u>36,536</u>	<u>40,643</u>	<u>+4,107</u>
Operation and maintenance .....	25,844	5,339	30,430	33,513	+3,083
Capital investment .....	5,548	862	6,106	7,130	+1,024
Total .....	<u>31,392</u>	<u>6,201</u>	<u>36,536</u>	<u>40,643</u>	<u>+4,107</u>

1/ Excludes following man-years in other agencies that receive funds from the Forest Service: 1976, 14; 1977, 14; 1978, 22.





GOALS: Provide for orderly real estate management of the National Forest System while protecting the resources and securing compliance with applicable air and water quality standards, to provide for land classification, land exchange, boundary adjustments, landline location, a land record system, maps and surveys for managing and administering primary activities on National Forest System lands.

Support the Forest Service land management programs by providing adequate maintenance of fire, administrative, and other purpose improvements.

Issue and administer land use permits when consistent with the public interest and good land management practices, for such purposes as assistance to the economic development of rural areas, energy development, antiquities study, and communications and utilities.

(1) Land classification (\$785,000, a decrease of \$144,000.)

The function of land classification is to structure and recommend programs concerning the extent, location, and composition of the National Forest System that will most effectively further national objectives. Purposes and activities are directed toward improving the landownership pattern to facilitate protection, management, development and use of recreation, timber, range forage, water, and wildlife resources, all of which can contribute significantly to the economic growth and environment of rural areas.

Financing at the level indicated would enable Forest Service to meet critical needs for:

- (a) Continuing involvement in Alaska and cooperation with the Department of the Interior and Congress in considering proposals for Native selections as provided for in the Alaska Native Claims Settlement Act.
- (b) Consideration of applications for selection of land by the State of Alaska, which is authorized to select up to 400,000 acres of National Forest land under the Alaska Statehood Act.
- (c) Identification and detailed analysis of areas within and adjacent to National Forests and National Grasslands to determine the changes which should be made in landownership patterns to increase efficiency of administration and to facilitate accomplishment of national objectives. Of particular urgency are intensive unit planning projects and participation in joint agency planning efforts.
- (d) Evaluation of possible transfer of Federal lands to or from the National Forest System, including consideration of Indian requests for land and jurisdictional transfers at numerous Federal water control projects particularly important for outdoor recreation.
- (e) Analysis and classification of lands with potential for national recreation areas, monuments, wildlife preserves, or other special status.

Continuous review of the location and extent of the National Forest System components is desirable to determine the best land use and ownership patterns considering new developments and needs. The 154 National Forests and 19 National Grasslands located in 43 States and Puerto Rico include nearly 40 million acres of non-Federal land. Programs for changes in landownership within existing boundaries of these units need to be based upon consideration and careful analysis of their short- and long-range effects.



This program would support the objectives of the Resources Planning Act. The long-range landownership planning conducted under this program provides the basis necessary for subsequent programing of the actual adjustments which are accomplished through purchase, exchange, donation or transfer. Such adjustments would enhance the effectiveness of all other resource programs related to the management of renewable resources.

Consolidated blocks of National Forest ownership can be administered and protected more economically and effectively than scattered or dispersed tracts. Dispersed ownership usually results in more surveying and marking of property lines, more rights-of-way problems, greater unit costs of road development, greater hazards from fire or trespass, coordination problems when dealing with insect and disease outbreaks, and more difficulties and complications in putting various management plans into effect. Dispersed ownership may create problems of administration from the standpoint of both the interests of the private owner and the best management of public properties. An example is the 275,000 miles of property lines between National Forest land and other ownerships. About 30,000 miles, or 11 percent, are surveyed and marked. As a result of mixed ownership and inadequate boundary identification, an estimated 45,250 trespass cases exist on National Forest System land.

This program is also necessary to achieve the Resources Planning Act target--

By 1979, establish a long-range private-public ownership and land use pattern in cooperation with the States, counties, and other local governments. Complete by 1981 an assessment of the National Forest System land adjustments needed to achieve that pattern.

#### Examples of Recent Accomplishments

- Analysis for purchase of 135,000 acres of the Klamath Indian Forest, Oregon, for addition to the National Forest System.
- Addition to the Toiyabe National Forest of approximately 25,000 acres of the Redfield Estate through Internal Revenue Service under provisions of the Tax Reform Act.
- Investigation of Indian requests for land--Northern Cheyenne, San Carlos, Mescalero, Havasupai, Taos.
- Establishment of Hells Canyon National Recreation Area in Oregon, Idaho, Washington, and the Cascade Head National Scenic Research Area in Oregon.
- Completed interchanges with the Corps of Engineers at Remer, Minnesota; Fort Leonard Wood, Missouri; Sam Rayburn Reservoir, Texas.
- Transfer of lands between the Tennessee Valley Authority and the Forest Service at Hiwassee Reservoir, North Carolina.
- Analysis of possible boundary adjustments between National Parks-Monuments-Memorials and National Forests at the Coronado National Memorial, Mount Rushmore Memorial, Lassen Volcanic National Park, Teton National Park, Olympic National Park, and Grand Canyon National Park.
- Study of new National Forest proposal in northern Alabama-southern Tennessee.
- Study for determination of best disposition of former Title III, Bankhead-Jones lands at Camp Gruber, Oklahoma, no longer needed for military use.
- Completed issuance of regulations, policies, and guidelines needed for conveyances to Natives under the Alaska Native Claims Settlement Act.



- (2) Land exchange (\$3,838,000, an increase of \$54,000 for pay costs and other support services.)

The Resources Planning Act assessment indicates a goal of adjusting land ownership whereby title to approximately 8 million acres of land would become vested in the United States. Approximately 6 million acres would be transferred to private ownership.

This adjustment in ownership would benefit both the public and private sectors. Administration of both public and private lands would be enhanced. For each dollar expended there are savings in administration; road costs; the location, posting and maintenance of property lines; the issuance of special use permits and resolution of claims and trespass. Protection and enhancement of the environment could be obtained through well conceived exchanges. The disposal of lands adjacent to communities could result in better planning, enhancing both the economic and environmental aspects of these communities.

In fiscal year 1978 the program would involve the examination and appraisal of 200,000 acres and the approval of 200 exchanges involving 80,000 acres of lands being transferred to public ownership.

The program also provides for cash equalization payments in land exchanges, under the Federal Land Policy and Management Act of 1976.

- (3) Land status records and cadastral engineering (land line location) (\$7,130,000, a program increase of \$929,000, increase of \$95,000 for pay costs and other support services, and increase of 20 permanent full-time man-years.)

(a) Land status records. These records of the interests in lands administered by the Forest Service provide the basis for land use and resources management, as well as the basis for distribution of the 25 percent receipts to the States. The land status project would be essentially completed in fiscal year 1978, and the program would provide for recurrent updating at least every 60 days. Only one or two regions will require an additional year for completion.

(b) Cadastral engineering (land line location). Of the 272,500 miles of property boundary between National Forest System lands and adjoining lands owned by others, about 10 percent are properly located and marked. As a consequence, effective management of the timber and other resource activities, including minerals, is severely hampered by unknown, uncertain, or erroneous property boundaries.

Private developments within and adjacent to the National Forests are occurring at a rate never before experienced. As an example, along the Colorado Front Range which extends from the Wyoming border southward to Colorado Springs, there are an estimated 400 tracts of privately owned land subdivided for second-home use, plus 3,250 cases of unauthorized occupancy. Region 8, encompassing the southern portion of the United States from Texas to Virginia, has 1,446 known cases of unauthorized occupancy and an estimated 5,000 probable. Similar situations exist throughout all areas of the National Forest System which contains over 187 million acres of land.

The most significant need for the recommended program increase, however, is to avoid future costly occupancy trespass, and resolve current situations as they are discovered. To accomplish this, efforts must be considerably increased to properly identify and mark on the ground the 272,500 miles of property line which affect an estimated three million owners of adjacent parcels. It is not uncommon for those claims cases which are resolved in



Project (8)

court to cost \$20,000 each. The rapid expansion of private developments, mentioned earlier, has resulted in a substantial increase in litigation, Congressional requests for response, and proposals for private legislative relief.

- (c) Bureau of Land Management cadastral surveys. Annually the Forest Service transfers to the Bureau of Land Management, funds for urgent cadastral surveys on public domain lands where such surveying falls only within the authority of BLM. The program proposal for fiscal year 1978 is \$670,000.

The work to be done under the cadastral program is shown in the following table. This work is carried on in every State in which the Forest Service administers land.

	Accomplished	Planned	
	FY 1976	FY 1977	FY 1978
<u>Corners (Nos.)</u>			
Search .....	28,684	30,000	40,000
Remonument .....	8,700	10,000	12,000
Establish or reestablish	7,405	10,000	11,500
<u>Boundaries (miles)</u>			
Locate and mark:			
To full standard ..	2,679	3,500	4,000
To partial standard	704	100	100
Maintenance .....	1,652	2,500	3,400

- (4) Geometronics (\$3,843,000 with a program increase of \$956,000, increase of \$95,000 for pay costs and other support services, and an increase of 20 permanent full-time man-years.)

Management of National Forest lands requires availability of current maps on a timely basis. These maps must show terrain, current land development and the composition and extent of vegetation and other resources. The relationship of resources must be readily shown and quantified for proper decisionmaking and resource allocation.

The proposed level reflects the identified need for geometronics products under the Resources Planning Act recommended program level as quantified in the following six major product output targets.

- (a) Aerial photography = 68,100 square miles. Aerial photography is used for mapping of vegetative types (typing), terrain definition (project maps and digitizing) and map update.
- (b) Primary base = 1,700-7 1/2' quadrangle. This activity provides updated 1:24,000 maps to user. Maps are revised in a coordinated program with U.S. Geological Survey. Revision cycles are on a seven-year basis with high activity forests requiring more current revisions. Progress includes an orthophoto base layer to display in a pictorial form ground vegetation and overlays of various resource data.
- (c) Secondary base = 48 map sheets. These maps cover complete National Forests at a scale of 1/2" to the mile. This base is heavily used for other administrative and forest visitor maps, such as recreation use, off-road vehicle control, and wilderness.
- (d) Project mapping = 699,700 acres. These large scale maps are produced by use of stereo-plotting instruments and aerial photographs. They provide economical preliminary design and design data for roads, recreation areas, logging system plans and timber sale layout, and others.





- (e) Digital data = 2,002,000 acres. Converting map and aerial photograph images to digital form provides necessary data for automatic production of a variety of maps needed by the planner, forester or engineer. Maps that are difficult and time-consuming to produce by hand methods are quickly produced by automated systems. The digital information is also necessary as input to data management systems requiring geographically controlled output such as area, relative locations, and resource quantity determinations.
- (f) Special purpose maps = 2,150 maps. These maps are derived from the primary and secondary base series maps and serve specialized purposes in timber sales, recreation use, wilderness area display and special Congressional and other legislative needs. Scales vary from very small (1/4' to 1 mile) to large (4' to 1 mile) to satisfy each special requirement.

In fiscal year 1977 a Geometronics Service Center was established in Salt Lake City, Utah. The centralization of the geometronics activities will maximize effectiveness and reduce the cost of equipping regional organizations with instrumentation to handle ever-changing modern technology requirements.

- (5) Maintenance of improvements for fire and general purposes (including communications) (\$13,689,000, a program increase of \$881,000, increase of \$138,000 for pay and other support services, and an increase of 14 permanent full-time man-years.)

This program provides for maintenance and for minor betterment, minor construction or replacement of buildings, utilities, pollution abatement facilities, airfields, communications systems and related structures of a fire and general purpose nature throughout the National Forests and National Grasslands. Individual projects authorized for construction herein are limited to those that are of a fire and general purpose nature and are less than \$25,000 each. Maintenance of the fire and general purpose facilities is essential to the achievement of program outputs. The increase reflects the funding necessary to carry out a maintenance program at approximately the same level as in fiscal year 1977.

It is essential that the physical plant, upon which all Forest Service programs depend, be brought to acceptable standards and be maintained at that level. These funds would be used to provide basic maintenance of the following facilities:

Type of facility

Fire lookouts, towers, and observatories .....	1,500
Dwellings, cabins, barracks, and trailers .....	5,900
Field offices .....	800
Storage and service buildings .....	8,000
Water and sewer systems .....	5,000
Radio units .....	22,100
Landing fields and heliports .....	500
Miles of telephone lines .....	7,500
Miles of administrative fences .....	1,200

- (6) Special uses--non-recreation (\$6,218,000, a program increase of \$155,000, an increase of \$54,000 for pay and other support services, and an increase of 5 permanent full-time man-years.)

The increase would be used to improve administration of authorized special uses. It would allow timely handling of urgently needed new applications, and also provide for initiating action on occupancy trespass cases.



GOAL: To accommodate land occupancies necessary to the public's needs for energy, minerals, and natural resource development, transportation and distribution. To accommodate uses for the use and convenience of businesses and individuals to the extent compatible with public need and resource protection. To administer authorized uses in a manner that will assure long-term resource protection and protect the public health, safety, and convenience. To obtain appropriate fees for these uses of the public's land.

Program Description: Under this program applications are received and special use permits are issued and administered for a variety of uses. These uses support development and utilization of energy resources, economic development of rural areas, and provide a land base for utilities and communications. They include:

- (a) Agriculture
- (b) Community improvements
- (c) Industry
- (d) Public information
- (e) Research, study, and training
- (f) Transportation
- (g) Water resources

In fiscal year 1978, more than 55,000 special use permits covering over 6.3 million acres will be in force. The proposed funding level would allow for timely consideration of applications for vital uses. It would also allow inspection of existing hazardous uses and supervision of the construction and installation of new facilities. Occupancy trespass cases are increasing and this item provides funding for handling such cases.

Emphasis would be given to responding to applications for uses necessary to meet the Nation's energy needs. Punctual and thorough analysis of these requests would facilitate energy resource development and installation of necessary transmission and transportation improvements. These actions would keep the costs to the public at a minimum. Public energy needs would be met while protecting the quality of air and water. Impacts upon the soils and other resources would be recognized and mitigated through the supporting services of various specialists. Costly delays imposed by court actions would be reduced.

Fiscal year 1976 receipts from special land uses were \$1,809,959. The fee value of free permits authorized by law to Government agencies or for public use is estimated to be about \$3 million. It is estimated that fiscal year 1978 receipts will be over \$2 million.

(7) Payments to Employees' Compensation Fund (\$5,140,000, an increase of \$894,000.)

These funds would be used to reimburse the Employees' Compensation Fund, Department of Labor, in accordance with PL 86-767 (5 USC 785), which was enacted September 13, 1960, for benefit payments made from that fund to employees of the Forest Service who are injured while in the performance of duty. The 1977 payment was \$4,245,928.





Many special uses on the National Forests are vital to the Nation's Energy Supply.





FIGHTING FOREST FIRES  
(All operation and maintenance)

Project (9)

		Permanent full-time man-years
1976 .....	\$119,275,000	762
Transition quarter .....	(44,275,000)	
1977 .....	4,275,000 1/	451
1978 .....	4,275,000	451
Change .....	--	--

1/ Excludes proposed supplemental of \$207 million.

No increase is proposed.

This program provides an initial amount for presuppression activities and fighting forest fires on or threatening National Forests and Grasslands which cannot be handled by the regular forest fire protection program. This initial appropriation is supplemented each year to the extent necessary.

Included are expenditures for men and equipment to control large fires. In addition, when fire weather conditions present an unusual threat, men are engaged in special efforts to prevent fires and temporary forces are pre-positioned at strategic locations to be available to attack fast-spreading fires.

The volume and scope of emergency forest firefighting varies annually according to severity of burning conditions and the extent of the forest fire protection program. This program and the forest fire protection program are directly related. The cost of fire protection on the National Forests and Grasslands is the sum of the two programs.

Calendar Year 1976 Fire Season

The 1976 fire season started out to be one of the more severe seasons for forest fires in recent years due to the severe drought conditions in many areas of the country. Many major fires occurred in California, Arizona, and New Mexico, as part of the growing pattern of extreme dryness across portions of the Nation.

Because of this situation, forest fires, which are primarily caused by human carelessness, were a major concern of Forest Service officials this past summer, especially during the heavy recreation period of the July 4th holiday through Labor Day. The Forest Service joined other Federal agencies and States to utilize increased fire prevention measures during this critical period. Visitors to the Nation's forests and grasslands were urged to use caution to prevent wildland fires while using these areas.

Depending on the severity of fire conditions, forestry officials imposed public use, fire, and smoking restrictions, and in some cases, closed off forest areas to reduce the threat of fires. Chainsaws, trail bikes, generators, and other internal combustion engines, excluding automobiles, used in National Forests were required to have spark arresters approved by the Forest Service. Other Federal agencies and many States have similar requirements. The discharge of fireworks and incendiary ammunition was prohibited within all National Forest recreation areas.

The most critical fire conditions developed in California and extended northward to the mountains of southern Oregon. Fire conditions became critical very early this past year in the foothills and mountains of California and southern Oregon, beginning in early May, due to the rapidly drying conditions. The average water content of the snowpack this year was only 5.2 inches compared to 46 inches in 1975.





Fire danger in Arizona, New Mexico and southern Utah ranged from moderate to extreme. New Mexico imposed State-wide campfire and smoking restrictions. In Arizona, all National Forests, with the exception of the Coronado National Forest, had campfire and smoking restrictions. The three States lie in the summer storm area which is subject to numerous lightning fires.

Another area of concern was the eastern side of the Rocky Mountain Range in Wyoming and Colorado since the area was also abnormally dry. To the West, Idaho banned the burning of forest and rangeland without a permit.

Minnesota and Wisconsin were the driest since weather records were first recorded in these States in the 1880's. Most areas were at least 3-4 inches below normal precipitation levels and have had twice the number of normal fires. The northern portion of Minnesota was under a burning ban which prohibited open fires including trash, land clearing, and campfires. Michigan experienced many large fires due to near drought conditions throughout the early fall.

This past spring, Southeastern States were badly burned in the worst fires in years, until rains returned the areas to normal conditions.



GEOGRAPHIC BREAKDOWN OF PROGRAM LEVEL  
(in thousands)

	<u>FY 1976</u>	<u>Transition quarter</u>
Alabama .....	\$184	\$19
Alaska .....	88	56
Arizona .....	17,505	5,481
Arkansas .....	824	219
California .....	53,750	21,332
Colorado .....	1,120	478
Florida .....	347	68
Georgia .....	484	2
Idaho .....	8,727	6,692
Illinois .....	74	37
Indiana .....	56	13
Kentucky .....	978	10
Louisiana .....	183	2
Maine .....	4	5
Michigan .....	262	1,419
Minnesota .....	1,005	2,643
Mississippi .....	467	10
Missouri .....	559	133
Montana .....	4,272	3,813
Nebraska .....	85	151
Nevada .....	598	390
New Hampshire .....	25	30
New Mexico .....	9,778	3,154
North Carolina .....	1,660	-3
North Dakota .....	2	- -
Ohio .....	56	13
Oklahoma .....	65	31
Oregon .....	20,925	14,427
Pennsylvania .....	27	58
South Carolina .....	291	7
South Dakota .....	322	60
Tennessee .....	990	2
Texas .....	184	8
Utah .....	1,713	1,671
Vermont .....	45	18
Virginia .....	1,600	10
Washington .....	9,889	6,849
West Virginia .....	171	45
Wisconsin .....	108	132
Wyoming .....	1,196	1,043
Undistributed .....	<u>10,314</u>	<u>- -</u>
Total .....	<u>150,933</u>	<u>70,528</u>

The amounts for 1977 and 1978 have not been distributed by States. Locations of emergency firefighting funds cannot be forecast with any degree of accuracy.



FOREST INSECT AND DISEASE MANAGEMENT  
(All operation and maintenance)

		<u>1/ Permanent full-time man-years</u>
1976 .....	\$19,865,000	260
Transition quarter .....	(3,145,000)	
1977 .....	16,193,000	236
1978 .....	18,011,000	257
Change .....	<u>+1,818,000</u>	<u>+21</u>

An increase of \$1,818,000, with an increase of 21 permanent full-time man-years, is proposed as follows:

- (1) To broaden the scope and coverage of on-going detection and evaluation activities to provide additional technical assistance to land managers, \$1,764,000. Methods improvement and insect and disease impact evaluation activities will also be emphasized.
- (2) To provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$54,000.

The fiscal year 1978 program will increase the scope and coverage of on-going detection and evaluation activities to provide for better biological assessments and faster response times in dealing with pest populations. By decreasing the time during which insects or diseases go undetected and better predicting the course they might follow, suppression costs can be lowered, timber supply losses reduced, and the Nation's forests will be better preserved for the enjoyment of all.

Strong emphasis would be placed on methods improvement. More reliable and efficient procedures are needed for making detection surveys and biological evaluations.

Damage to the forest resource is on a sharp upward trend, particularly damage caused by bark beetles and defoliators. The 1978 program will facilitate the collection of forest resource impact data. These data are needed to design insect and disease management operations that will reduce future mortality, and to better evaluate the economic efficiency of existing programs and projects.

Past evaluations have resulted in redirection of certain programs at considerable savings of dollars and manpower. As an example, evaluations revealed that anticipated white pine blister rust control in high hazard areas was not being achieved. The program was subsequently reduced from a cost of \$2,295,000 in 1967 to approximately \$185,000 in 1976. White pine blister rust suppression continues primarily as a part of the Department of the Interior program, although some small projects on State and private lands would be undertaken by the Forest Service.

Additional pilot projects directed at supporting EPA registration of promising products will be undertaken. This is critical if we are to continue to have suppression agents for forest insects and diseases. Because of limited markets for pesticides in forestry uses, there is little incentive for manufacturers to assume the additional development costs of extending their labels to include forest insect and disease suppression. Therefore, the Forest Service must underwrite the collection of any additional data needed to demonstrate that promising products can be employed safely and effectively in the forests.

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1/ Excludes following man-years in other agencies that receive funds from the Forest Service: 1976, 10; 1977, 10; 1978, 10.



Project (10)

The Federal Insecticide, Fungicide, and Rodenticide Act, as amended, (PL 92-516) requires that all personnel recommending, supervising, or using restricted pesticides be certified and/or licensed. Work will begin on a comprehensive training and certification program, to be developed in conjunction with other Federal and State agencies to provide for the implementation of FIFRA and to assure the safe use of all pesticides in forest management programs and projects.

Defoliating insects--particularly the gypsy moth, spruce budworm, and western spruce budworm--will be suppressed where it is determined that a Federal role exists, and that the project is biologically sound, environmentally acceptable, and economically efficient. It is not possible to predict this far in advance the exact locale or scope of suppression operations, but present trends indicate a need for:

- (1) Spruce budworm and western spruce budworm suppression projects in Maine, Minnesota, Montana, Oregon, and Washington.
- (2) Gypsy moth suppression projects in New Jersey, New York, Pennsylvania, and Rhode Island.

The fiscal year 1978 program would strongly emphasize the current effort to hold bark beetle caused losses to tolerable levels. Firm data are not available as yet, but it is expected that projects will be required to suppress:

- (1) Mountain pine beetle in Colorado, Idaho, Montana, Oregon, South Dakota, Wyoming, and Washington.
- (2) Southern pine beetle in Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia.

Disease suppression projects in fiscal year 1978 would be directed toward reducing the growth loss caused by the dwarf mistletoe. Projects would be concentrated on the modification of the spread and intensification of this parasite in young established stands, and in the removal of infested overstory trees in recently harvested or burned areas. Dwarf mistletoe suppression projects are expected in areas managed for timber and recreation in Montana, Idaho, Washington, Oregon, California, Nevada, Utah, Wyoming, Colorado, Arizona, and New Mexico.

The Forest Insect and Disease Management program involves protection of the forests from depredation by insects and diseases on lands of all ownerships. Activities include:

- (1) The prevention, detection, evaluation, and suppression of insects and diseases on all Federal forest lands.
- (2) Federal financial assistance to States for a similar program on State and private lands.
- (3) Coordination of the insect and disease program on forest lands of all ownerships.

Forest pests seriously reduce the potential timber resource through direct killing and growth loss of trees. Much of the killed volume is dispersed throughout the entire forest and becomes unusable before it can be harvested. Intensive management of the timber resource is geared to using the optimum portion of the productive capacity of the forest land. Achievement of optimum timber production is dependent on a strong program for prevention, detection, evaluation, and suppression of all insect and disease pests.

Insect and disease management scientists serve to protect the environment by carefully evaluating and weighing the adverse effects of unchecked insect and disease outbreaks against the benefits which might result from prescribed suppression





## Project (10)

treatments. As part of their overall responsibilities, forest insect and disease management personnel attempt to keep all environmental impacts, both beneficial and adverse, in proper perspective and recommend only those courses of action that will provide the greatest net benefits to the American people.

### Noxious Farm Weed Suppression

Noxious farm weeds are a serious problem to the farm and livestock industry. Infestations on both private and public lands must be treated through a concerted effort on the part of all landowners to be effective. Selection of specific National Forest System lands for treatment will depend on cooperative weed control district work on adjacent lands. The fiscal year 1978 effort will be directed at maintaining the acreage treated during fiscal year 1977, plus the treatment of approximately 7,000 additional acres.

Federal funds (all operation and maintenance) for fiscal year 1978, as compared with previous periods, are as follows:

	<u>1976</u>	<u>Transition quarter</u>	<u>1977</u>	<u>1978</u>	<u>Change</u>
		(in thousands)			
Detection, evaluation, technical assistance, training, impact and methods improvement .....	\$8,985	\$2,665	\$9,012	\$10,205	+\$1,193
Bark beetle projects .....	552	381	450	450	- -
Defoliator projects .....	6,650	99	496	1,121	+625
Other insect and disease projects	327	- -	330	330	- -
Noxious weed projects .....	- -	- -	880	880	- -
Contingency .....	3,351	- -	5,025	5,025	- -
Total .....	19,865	3,145	16,193	18,011	+1,818

### Examples of Recent Accomplishments

Cooperation with States. In fiscal year 1976, 42 States participated in the Cooperative Pest Action Program. It is expected that 1 or 2 additional States will join the program in fiscal year 1977. Fiscal year 1976 suppression project and pest action program cost-sharing with the States led to approximately 8.5 million Federal dollars moving directly and 3.5 million Federal dollars moving indirectly into the Cooperative State Forest Insect and Disease Management Programs.

Bark beetles. Suppression of various bark beetle outbreaks in the United States involved treatment of numerous spot infestations in the South, Midwest, and West. The massive southern pine beetle epidemic is still being vigorously attacked on many fronts. Although direct treatment was necessary in some places, greater advantage was taken to utilize removal of infested trees from the forests before the insects were able to emerge and kill additional trees. In 1976, approximately 134.3 million board feet and 418.6 thousand cubic feet of merchantable timber volume were salvaged from forests in the South.

Bark beetle suppression projects directed primarily at the mountain pine beetle in the West resulted in approximately 94.2 million board feet and 7.8 thousand cords of merchantable timber volume being protected and 29.3 million board feet and 4.3 thousand cords of merchantable timber volume being salvaged from forests.

Spruce budworm and western spruce budworm. Some 7.5 million acres of spruce-fir type in the State of Maine were infested by the eastern spruce budworm in 1975. Sevin 4-oil and Dylox were used in a cooperative suppression effort with the State of Maine to treat some 3.5 million acres where severe damage was imminent in 1976. Foliage protection was achieved resulting in approximately 9.3 million board feet and 37.3 million cords of merchantable timber volume being protected.



Project (10)

During 1975 the western spruce budworm infested approximately 532,000 acres in the States of Oregon and Washington. Malathion was used in the summer of 1976 to suppress budworm populations on National Forest lands and, in cooperation the USDI-Bureau of Indian Affairs and the State of Washington, on the Warm Springs Indian Reservation and State and private lands. Some 367,800 acres of high use, high value areas were sprayed, of which approximately 7,000 acres were on the Warm Springs Indian Reservation in Oregon and 34,700 acres were on State and private lands in the State of Washington. Approximately 396 million board feet of merchantable timber volume was protected in addition to other resource values.

Gypsy moth. A total of 464,451 acres of woodland in the Northeastern United States was defoliated by the gypsy moth in 1975, making this the second successive year that this insect population has declined. In spite of this decline, cooperative suppression efforts with the States of New Jersey and Rhode Island were necessary in 1976. Some 47,600 acres were treated in 1976 with various pesticides, but most of these acres were treated with Sevin Sprayable and Sevin 4-oil. Foliage protection was achieved in the spray area.



GEOGRAPHIC BREAKDOWN OF PROGRAM LEVEL--in thousands Project (10)

	1976	Transition quarter	1977 estimate	1978 estimate	Change
Alabama .....	\$302	\$55	\$216	\$355	+\$139
Alaska .....	173	65	209	220	+11
Arizona .....	341	90	270	157	-113
Arkansas .....	226	53	147	62	-85
California .....	1,136	356	1,307	1,086	-221
Colorado .....	642	195	436	920	+484
Connecticut .....	- -	- -	- -	48	+48
Delaware .....	- -	- -	- -	10	+10
District of Columbia	517	181	969	427	-542
Florida .....	143	42	147	60	-87
Georgia .....	314	61	1,124	420	-704
Hawaii .....	15	- -	15	25	+10
Idaho .....	357	149	564	590	+26
Illinois .....	31	1	2	10	+8
Indiana .....	25	14	65	10	-55
Iowa .....	9	9	65	12	-53
Kansas .....	9	2	- -	12	+12
Kentucky .....	179	46	103	70	-33
Louisiana .....	169	55	151	250	+99
Maine .....	4,828	66	227	675	+448
Maryland .....	17	16	65	60	-5
Massachusetts ...	13	12	65	30	-35
Michigan .....	118	24	147	125	-22
Minnesota .....	131	47	151	210	+59
Mississippi .....	256	90	178	160	-18
Missouri .....	87	27	88	95	+7
Montana .....	1,240	298	984	860	-124
Nebraska .....	24	6	34	12	-22
Nevada .....	4	1	9	42	+33
New Hampshire ...	40	18	66	120	+54
New Jersey .....	211	17	65	200	+135
New Mexico .....	104	55	343	338	-5
New York .....	72	17	128	120	-8
North Carolina ..	381	123	244	270	+26
Ohio .....	36	17	65	70	+5
Oklahoma .....	115	25	76	22	-54
Oregon .....	625	256	717	630	-87
Pennsylvania ....	78	55	184	120	-64
Rhode Island ....	12	- -	65	45	-20
South Carolina ..	213	54	128	166	+38
South Dakota ....	836	365	310	603	+293
Tennessee .....	222	91	173	160	-13
Texas .....	420	200	175	460	+285
Utah .....	114	84	299	200	-99
Vermont .....	38	21	65	90	+25
Virginia .....	180	47	208	990	+782
Washington .....	1,328	485	227	790	+563
West Virginia ...	133	57	127	210	+83
Wisconsin .....	135	80	188	157	-31
Wyoming .....	148	47	314	212	-102
Total program					
level .....	16,747	4,075	11,905	12,986	+1,081
Contingency .....	- -	- -	9,448	5,025	-4,423
Unobligated balance					
brought forward	-3,139	-6,257	-5,160	- -	+5,160
Unobligated balance					
carried forward	6,257	5,160	- -	- -	- -
Unobligated balance					
lapsing .....	- -	167	- -	- -	- -
Total appro-					
priation .....	19,865	3,145	16,193	18,011	+1,818



COOPERATIVE LAW ENFORCEMENT  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$3,954,000	33
Transition quarter .....	(1,072,000)	
1977 .....	5,605,000	44
1978 .....	5,865,000	45
Change .....	<u>+260,000</u>	<u>+1</u>

An increase of \$260,000, with an increase of 1 permanent full-time man-year, is proposed as follows:

- (1) To continue cooperative law enforcement at the fiscal year 1977 program level maintaining approximately 460 cooperative agreements, \$238,000. This would allow for continuity of program levels and support the staffing commitments made by cooperators to provide the service requested.
- (2) To provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$22,000.

Fiscal year 1978 funds, compared with other periods, follow (in thousands):

	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977 estimate</u>	<u>FY 1978 estimate</u>	<u>Change</u>
Program level .....	\$3,722	\$1,567	\$6,161	\$5,865	-\$296
Unobligated balance brought forward .....	-819	-1,051	-556	- -	+556
Unobligated balance carried forward .....	<u>1,051</u>	<u>556</u>	<u>- -</u>	<u>- -</u>	<u>- -</u>
Appropriation (budget authority) .....	3,954	1,072	5,605	5,865	+260

GOAL: To maintain law enforcement cooperation with States and subdivisions in coping with situations involving vandalism, destruction of property, theft, and personal assaults occurring on National Forest System lands.

Public Law 92-82 authorized the Secretary of Agriculture to cooperate in the enforcement of laws with States and political subdivisions thereof, including reimbursement for expenditures incurred in connection with the enforcement of State and local laws on National Forest System lands. As a result of this legislation, reinforced by the President's message to Congress on June 19, 1975, the Forest Service is emphasizing the negotiation and operation of cooperative law enforcement agreements.

The agreements cover enforcement of State laws on National Forests by State and local agencies. Reimbursements are limited to extraordinary expenditures incurred in providing additional services requested by the Forest Service beyond those services the local law enforcement agency is normally able and expected to provide. Most of the funds are expended for patrol activities to prevent crimes by providing for the presence of law enforcement officers in problem areas.

The usual agreement is with the county sheriff's department as he normally has primary law enforcement responsibility.





Project (11)

These small organizations generally must increase their staff and invest in added equipment to provide service under the agreement. In order to meet these increased costs, they need a commitment that there will be reasonable continuity in program financing from year to year. Anything less will make it difficult, if not impossible, to negotiate or renew agreements in the future and will reduce this source of needed help in law enforcement on the National Forests.

Continuation of the existing program level provides the capability to discourage littering and effectively reduces the damage to, or theft of, Government property. This will also provide for the reasonable safety of the public while using the National Forests. There are 741 counties in 43 States eligible to participate in this program.



## GEOGRAPHIC BREAKDOWN OF APPROPRIATION

	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977 estimate</u> (in thousands)	<u>FY 1978 estimate</u>	<u>Change</u>
Alabama .....	\$19	\$11	\$41	\$43	\$2
Alaska .....	144	53	165	175	10
Arizona .....	212	58	316	604	288
Arkansas .....	52	29	61	66	5
California .....	696	325	1,050	1,056	6
Colorado .....	57	38	116	117	1
District of Columbia	43	6	55	60	5
Florida .....	95	24	110	155	45
Georgia .....	28	39	62	85	23
Idaho .....	239	85	331	352	21
Illinois .....	25	5	40	46	6
Indiana .....	15	4	18	22	4
Kentucky .....	27	16	55	62	7
Louisiana .....	20	4	40	40	- -
Maine .....	4	2	11	11	- -
Michigan .....	53	29	90	92	2
Minnesota .....	57	30	25	103	78
Mississippi .....	20	9	24	24	- -
Missouri .....	64	17	71	94	23
Montana .....	239	100	224	259	35
Nebraska .....	- -	- -	1	2	1
Nevada .....	47	28	73	80	7
New Hampshire .....	59	29	76	76	- -
New Mexico .....	201	74	282	282	- -
New York .....	2	2	5	5	- -
North Carolina ....	49	34	90	90	- -
North Dakota .....	- -	- -	27	30	3
Ohio .....	18	5	20	26	6
Oklahoma .....	2	2	9	9	- -
Oregon .....	353	151	401	526	125
Pennsylvania .....	32	16	45	45	- -
Puerto Rico .....	20	4	19	19	- -
South Carolina ....	14	1	15	18	3
South Dakota .....	24	18	60	59	-1
Tennessee .....	33	14	75	103	28
Texas .....	25	7	53	55	2
Utah .....	255	100	269	317	48
Vermont .....	33	9	19	19	- -
Virginia .....	23	4	9	74	65
Washington .....	339	145	382	404	22
West Virginia .....	19	5	23	36	13
Wisconsin .....	22	12	35	35	- -
Wyoming .....	43	23	57	67	10
Subtotal .....	3,722	1,567	4,950	5,843	893
Contingency for new agreements .....	- -	- -	1,211	22	-633
Total .....	3,722	1,567	6,161	5,865	260



## FOREST PROTECTION AND UTILIZATION

### Proposed Changes in Language

Changes in language are proposed as follows. New language is underscored and deleted matter is enclosed in brackets.

For expenses necessary .....

- Forest land management: For necessary expenses ..... for insect and disease control shall be apportioned for use, pursuant to section 3679 of the Revised Statutes, as amended, to the extent necessary under the then existing conditions: Provided, That funds appropriated for
- 1 "Cooperative range improvements", pursuant to section 12 of the Act of April 24, 1950 (16 U.S.C. 580h), may be advanced to this appropriation:
- 2 Provided further, That funds appropriated for reforestation and stand improvement, \$ \_\_\_\_\_, the cooperative law enforcement program ..... shall remain available until expended.

Change 1 would eliminate the merging of funds with the Forest Protection and Utilization appropriation. It has been proposed that these funds be appropriated under the new appropriation, Rangeland Improvements. (See Proposed Changes in Language for Cooperative Range Improvements Rangeland Improvements.)

Change 2 is proposed to make reforestation and stand improvement funds available until expended to comply with Section 4(d)(3) of the National Forest Management Act of 1976 (PL 94-588, October 22, 1976).



Type size:  
17a M4/92

STANDARD FORM 304-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.  
504-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST LAND MANAGEMENT

A-11-34 b

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
FOREST SERVICE--Direct obligations:				
Personnel compensation:				
11.1 Permanent positions.....	151,075	42,356	170,540	176,555
11.3 Positions other than permanent.....	88,401	40,456	62,706	64,450
11.5 Other personnel compensation.....	29,546	14,960	5,836	6,795
11.8 Special personal services payments.....	4,611	1,363	207	200
Total personnel compensation.....	273,633	99,135	239,289	248,000
Personnel benefits:				
12.1 Civilian.....	31,043	9,349	32,708	33,830
13.0 Benefits for former personnel.....	14	11	15	.....
21.0 Travel and transportation of persons.....	18,481	6,504	15,312	16,495
22.0 Transportation of things .....	21,416	8,739	17,453	22,900
Rent, communications, and utilities:				
23.1 Standard level user charges.....	8,058	1,849	10,595	11,759
23.2 Other rent, communications, and utilities .....	19,160	3,097	4,726	6,030
24.0 Printing and reproduction.....	2,092	1,049	2,106	2,935
25.0 Other services.....	78,880	37,335	53,898	31,534
26.0 Supplies and materials.....	32,432	18,725	20,673	26,865
31.0 Equipment.....	9,175	10,528	8,727	11,955
32.0 Lands and structures.....	4,588	4,170	6,840	8,935
<del>33.0 Investments and loans</del> .....				
41.0 Grants, subsidies, and contributions.....	6,698	.....	3,780	4,046
42.0 Insurance claims and indemnities.....	232	54	94	100
<del>43.0 Interest and dividends</del> .....				
<del>44.0 Refunds</del> .....				
Subtotal, direct obligations	505,902	200,545	416,216	425,384
95.0 Quarters and subsistence charges.....	-2,196	-856	-2,210	-2,201
direct				
Total obligations.....	503,706	199,689	414,006	423,183
(Mono cast: 22.18)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST LAND MANAGEMENT

A-11-34b

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
FOREST SERVICE--Reimbursable obligations				
Personnel compensation:				
11.1 Permanent positions.....	1,631	475	1,784	1,787
11.3 Positions other than permanent.....	783	383	918	917
11.5 Other personnel compensation.....	540	539	625	626
11.8 Special personal services payments.....	71	39	154	155
Total personnel compensation.....	3,025	1,436	3,481	3,485
Personnel benefits:				
12.1 Civilian.....	271	126	293	293
<del>13.0 Benefits for former personnel</del>				
21.0 Travel and transportation of persons.....	194	132	240	240
22.0 Transportation of things .....	151	68	183	183
Rent, communications, and utilities:				
<del>23.1 Sunday travel expenses charges</del>				
23.2 Other rent, communications, and utilities .....	245	63	316	316
24.0 Printing and reproduction.....	16	4	16	16
25.0 Other services.....	2,197	1,038	2,602	2,598
26.0 Supplies and materials.....	1,019	405	1,538	1,538
31.0 Equipment.....	147	-69	157	157
32.0 Lands and structures.....	179	436	180	180
<del>33.0 Investments and loans</del>				
<del>41.0 Grants, subsidies, and contributions</del>				
<del>42.0 Government purchases and acquisitions</del>				
<del>43.0 Interest and dividends</del>				
<del>44.0 Refunds</del>				
Subtotal, reimbursable obligations .....	7,444	3,639	9,006	9,006
95.0 Quarters and subsistence charges .....	-8	-3	-6	-6
reimbursable				
Total obligations.....	7,436	3,636	9,000	9,000
Total obligations, Forest Service .....	511,142	203,325	423,006	432,183
(Mono cast: 22.18)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type also:  
17a M/G/99

STANDARD FORM 304-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised,  
304-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST LAND MANAGEMENT

A-11-34 b

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
ALLOCATION TO DEPARTMENT OF THE INTERIOR				
Personnel compensation:				
11.1 Permanent positions.....	240	349	283	324
11.3 Positions other than permanent.....	369	.....	397	441
11.5 Other personnel compensation.....	8	.....	9	10
<del>11.6 Special personnel services payments.....</del>				
Total personnel compensation.....	617	349	689	775
Personnel benefits:				
12.1 Civilian.....	50	19	58	68
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	162	.....	168	212
22.0 Transportation of things .....	38	19	44	48
<del>Rent, communications, and utilities:</del>				
<del>23.0 Standard level user charges.....</del>				
23.2 Other rent, communications, and utilities .....	6	.....	8	9
<del>24.0 Printing and reproduction.....</del>				
25.0 Other services.....	148	.....	220	213
26.0 Supplies and materials.....	35	25	49	47
31.0 Equipment.....	8	39	10	13
32.0 Lands and structures.....	6		5	5
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
<del>42.0 Information and administration.....</del>				
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Total obligations, Department of the Interior .....	1,070	451	1,251	1,390
99.0 Total obligations.....	512,212	203,776	424,257	433,573
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



## DEPARTMENT OF AGRICULTURE

A-11-34b

Type size:  
176M9/22

STANDARD FORM 300-7 FOREST SERVICE  
 FOREST PROTECTION AND UTILIZATION  
 June 1975, Office of Management and Budget Forest Land Management  
 Circular No. A-11, Revised. Personnel Summary

Identification code	19 76 actual	19 TQ	19 77 estimate	19 78 estimate
05-96-1100-0-1-302				
FOREST SERVICE				
Direct:				
Total number of permanent positions .....	11,076		11,488	11,795
Full-time equivalent of other positions .....	10,401		6,184	6,359
Average paid employment .....	20,245		20,476	22,288
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
Reimbursable:				
Total number of permanent positions .....	116		121	121
Full-time equivalent of other positions .....	83		94	94
Average paid employment .....	158		168	168
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
ALLOCATION ACCOUNTS				
Total number of permanent positions .....	24		24	32
Full-time equivalent of other positions .....	59		67	67
Average paid employment .....	75		77	94
Average GS grade .....	9.03		8.99	8.95
Average GS salary .....	\$16,230		\$16,168	\$16,108
Average salary of ungraded positions .....	\$13,209		\$13,209	\$13,209
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)









FOREST PROTECTION AND UTILIZATION  
FOREST RESEARCH

		<u>Permanent full-time man-years</u>
Appropriation, 1976 .....	\$82,280,000	2,578
Appropriation, transition quarter .....	(22,326,000)	
Estimate, 1977 .....	89,927,000	<u>2,726</u>
Estimate, 1978 .....	95,650,000	2,850
Change .....	<u>+5,723,000</u>	<u>+124</u>

SUMMARY OF INCREASES AND DECREASES  
(On basis of adjusted appropriation--dollars in thousands)

	Increase or Decrease (-)	Pay and other support services	Program	Permanent full-time man-years	Total 1978 estimate	Total Permanent full-time man-years
<u>Trees and timber management research.</u> .....	\$122	- -	- -	- -	\$15,903	626
<u>Forest watershed management research</u> --Increase will be used to accelerate research on methods to minimize and prevent nonpoint pollution.	84	\$383	12	8,510	292	
<u>Wildlife, range, and fish habitat research</u> --Increase will be used to accelerate research to provide knowl- edge needed to assure resource management activities are compatible or beneficial to the habitat needs of endangered and threatened species. ....	66	398	12	6,945	197	
<u>Forest recreation research</u> -- Increase will be used to accelerate research to provide knowledge to manage rapidly growing dispersed recreation activities, and to keep such uses compatible with other forest outputs.	32	487	9	2,079	54	
<u>Fire and atmospheric sciences research.</u> .....	71	- -	- -	8,769	241	
<u>Forest insects and disease research.</u> .....	175	- -	- -	19,966	501	
<u>Forest products utilization research.</u> .....	61	- -	- -	11,861	420	



SUMMARY OF INCREASES AND DECREASES--continued  
(On basis of adjusted appropriation--dollars in thousands)

	Increase or Decrease (-)			Total	Total
	Pay and other support services	Program	Permanent full-time man-years	1978 estimate	Permanent full-time man-years
<u>Forest engineering research.</u>	16	- -	- -	1,649	54
<u>Renewable resources evaluation--</u> Increase will be used to shorten reinventory cycles of timber and other renewable resources, improve resource data analyses, support State improvement of physical, social, and economic information for forest and rangeland activi- ties, and prepare the Resource Situation Assessments required by the Resources Planning Act of 1974. ....	187	3,609	91	13,202	304
<u>Surface environment and mining.</u>	2	- -	- -	2,603	21
<u>Forest economics and marketing research. ....</u>	30	- -	- -	4,163	140
Total, Forest Research .....	846	4,877	124	95,650	2,850



# FOREST PROTECTION AND UTILIZATION

## FOREST RESEARCH

### PROJECT STATEMENT

(On obligation basis)

Project	1976	Transition quarter	1977 estimate	1978 estimate	Change
<b>FOREST RESEARCH:</b>					
Forest and range management research:					
(12) Trees and timber management research .....	\$15,341,564:	\$4,544,428:	\$15,781,000:	\$15,903,000:	+\$122,000
(13) Forest watershed management research .....	7,807,381:	2,191,933:	8,043,000:	8,510,000:	+467,000
(14) Wildlife, range, and fish habitat research .....	4,912,152:	1,947,823:	6,481,000:	6,945,000:	+464,000
(15) Forest recreation research .....	1,316,244:	487,979:	1,560,000:	2,079,000:	+519,000
(16) Surface environment and mining .....	2,250,653:	696,839:	2,601,000:	2,603,000:	+2,000
Subtotal, Forest and range management research .....	31,627,994:	9,869,002:	34,466,000:	36,040,000:	+1,574,000
Forest protection research:					
(17) Fire and atmospheric sciences research .....	8,082,106:	2,395,499:	8,698,000:	8,769,000:	+71,000
(18) Forest insects and disease research .....	18,211,888:	5,674,519:	19,791,000:	19,966,000:	+175,000
Subtotal, Forest protection research .....	26,293,994:	8,070,018:	28,489,000:	28,735,000:	+246,000
Forest products and engineering research:					
(19) Forest products utilization research .....	10,410,613:	3,373,350:	11,800,000:	11,861,000:	+61,000
(20) Forest engineering research .....	1,551,170:	606,202:	1,633,000:	1,649,000:	+16,000
Subtotal, Forest products and engineering research .....	11,961,783:	3,979,552:	13,433,000:	13,510,000:	+77,000
Forest resource economics research:					
(21) Renewable resources evaluation .....	5,341,058:	1,738,732:	9,406,000:	13,202,000:	+3,796,000
(22) Forest economics and marketing research .....	3,784,251:	1,214,689:	4,133,000:	4,163,000:	+30,000
Subtotal, Forest resource economics research .....	9,125,309:	2,953,421:	13,539,000:	17,365,000:	+3,826,000
Total obligations or estimate .....	79,009,080:	24,871,993:	89,927,000:	95,650,000:	+5,723,000
Unobligated balance brought forward .....	-	-3,270,920:	-	-	-
Unobligated balance carried forward .....	3,270,920:	-	-	-	-
Unobligated balance lapsing .....	-	724,927:	-	-	-
Appropriation or estimate .....	82,280,000:	22,326,000:	89,927,000:	95,650,000:	+5,723,000



GEOGRAPHIC BREAKDOWN OF APPROPRIATION  
Forest Research

State	Headquarters or Project Location	FY 1977	FY 1978	Change
		estimate	estimate	
		(in thousands)		
Alabama	Auburn .....	\$346	\$349	+\$3
Alaska	Fairbanks .....	768	774	+6
	Juneau .....	1,363	1,385	+22
Arizona	Flagstaff .....	861	869	+8
	Tempe .....	1,044	1,054	+10
Arkansas	Fayetteville .....	326	328	+2
California	Arcata .....	458	562	+104
	Berkeley .....	3,091	3,127	+36
	Fresno .....	499	584	+85
	Redding .....	252	254	+2
	Riverside .....	2,674	2,696	+22
	Davis .....	435	440	+5
Colorado	Fort Collins .....	4,458	4,761	+303
Connecticut	Hamden .....	2,430	2,446	+16
District of Columbia	Washington .....	1,516	3,186	+1,670
Florida	Gainesville .....	289	292	+3
	Lehigh Acres .....	211	212	+1
	Marianna .....	219	221	+2
	Olustee .....	745	752	+7
Georgia	Athens .....	2,131	2,152	+21
	Macon .....	1,475	1,487	+12
Hawaii	Honolulu .....	872	950	+78
Idaho	Boise .....	451	536	+85
	Moscow .....	1,267	1,281	+14
Illinois	Carbondale .....	941	948	+7
Kentucky	Berea .....	1,002	1,007	+5
Louisiana	Pineville .....	3,076	3,096	+20
	New Orleans .....	1,674	2,034	+360
Maine	Orono .....	665	672	+7
Maryland	Beltsville .....	278	280	+2
Massachusetts	Amherst .....	393	399	+6
Michigan	East Lansing .....	826	833	+7
	Houghton .....	461	466	+5
	Marquette .....	317	319	+2
Minnesota	Duluth .....	227	229	+2
	Grand Rapids .....	525	528	+5
	St. Paul .....	2,189	2,537	+348
Mississippi	Gulfport .....	1,589	1,607	+18
	Oxford .....	368	472	+104
	Starkville .....	470	473	+3
	Stoneville .....	834	842	+8
Missouri	Columbia .....	350	417	+67
Montana	Bozeman .....	276	277	+1
	Missoula .....	3,958	4,169	+211
	Billings .....	1,838	1,840	+2
Nebraska	Lincoln .....	257	259	+2
Nevada	Reno .....	141	145	+2
New Hampshire	Durham .....	1,157	1,221	+64
New Jersey	Pennington .....	385	389	+4
New Mexico	Albuquerque .....	212	213	+1





GEOGRAPHIC BREAKDOWN OF APPROPRIATION  
Forest Research -- continued

State	Headquarters or Project Location	FY 1977 estimate	FY 1978 estimate	Change
		(in thousands)		
New York	Syracuse .....	\$109	\$111	+\$2
North Carolina	Asheville .....	1,476	1,824	+348
	Franklin .....	420	423	+3
	Research Triangle (Raleigh-Durham) .....	1,170	1,178	+8
North Dakota	Bottineau .....	223	226	+3
Ohio	Delaware (including Columbus) ..	2,047	2,068	+21
Oregon	Bend .....	342	345	+3
	Corvallis .....	3,022	3,054	+32
	LaGrande .....	801	809	+8
	Portland .....	3,681	4,023	+342
Pennsylvania	Upper Darby .....	1,097	1,345	+248
	Warren .....	443	446	+3
Puerto Rico	Rio Piedras .....	563	608	+45
South Carolina	Charleston .....	496	500	+4
	Clemson .....	344	414	+70
South Dakota	Rapid City .....	304	347	+43
Tennessee	Sewanee .....	254	256	+2
Texas	Lubbock .....	100	100	- -
	Nacogdoches .....	370	374	+4
Utah	Logan .....	714	719	+5
	Ogden .....	1,085	1,307	+222
	Provo .....	641	648	+7
Vermont	Burlington .....	618	623	+5
Washington	Olympia .....	342	345	+3
	Seattle .....	498	654	+156
	Wenatchee .....	389	393	+4
West Virginia	Morgantown .....	399	403	+4
	Parsons .....	453	509	+56
	Princeton .....	1,401	1,411	+10
Wisconsin	Madison .....	9,862	10,126	+264
	Rhineland .....	1,154	1,163	+9
Wyoming	Laramie .....	250	259	+9
	Subtotal .....	87,658	93,381	+5,723
Allocations to other agencies:				
	Agricultural Research Service .....	437	437	- -
	Animal and Plant Health Inspection Service ..	682	682	- -
	Cooperative State Research Service .....	1,150	1,150	- -
	Totals .....	89,927	95,650	+5,723



## MANAGEMENT OF RESEARCH

To provide a better overview of the scope and nature of the Forest Service research program, additional information is being provided for fiscal year 1978 under each line item as follows:

- (1) Changes in Research Work Units and Research Studies. A research work unit consists of a team of scientists and supporting personnel directed to find, through research, the answers to specific problems assigned to the research work unit. Typically the problems are approached through a series of studies with each study providing part of the answer.

Changes in research work units and research studies are provided to help understand the dynamic nature of the research program.

- (2) Short-Term Research Accomplishments. Examples of short-term research accomplishments are given to highlight results of various research studies. Typically these accomplishments are the result of one to a few years of research and provide a partial answer to major problems.

- (3) Long-Term Research Accomplishments. An example of long-term research accomplishments is provided to demonstrate the partial or total resolution of major problems through the accumulation of knowledge over a period of several years.



TREES AND TIMBER MANAGEMENT RESEARCH  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$15,077,000	573
Transition quarter .....	(4,316,000)	
1977 .....	15,781,000	626
1978 .....	15,903,000	626
Change .....	+122,000	- -

An increase of \$122,000 is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

No change in permanent full-time man-years is proposed.

Timber management research develops scientific knowledge of forest ecosystems with trees as a principal component and develops methods for culture of trees and management of forests for production of timber and for modification and improvement of man's environment. This includes:

- (1) Development of cultural methods for timber and timber-related crops.
- (2) Techniques of timber measurement.
- (3) Techniques of forest management planning.
- (4) Techniques for environmental tree culture.
- (5) Research in forest genetics.

The core of this research is determining the proper culture for over a hundred different commercial timber species based on a thorough knowledge of their ecology and growth requirements. This research determines how the Nation's needs for timber and other forest benefits can be met on Federal, State, and private lands through measures such as brush control, forest establishment, protection from animals, stand culture, soil and site improvement, and reestablishment of tree species valuable for timber or environmental purposes.

Research is being accelerated on intensive culture of important timber types to help meet the Nation's growing needs for domestic forest products.

Timber management research also provides forest managers with reliable information on growth and yield of forests and on the influence of cultural practices on yield and quality of the stand.

This program includes research on methods of producing timber-related forest crops such as gum naval stores, maple sap, and other income-producing natural products from forests.

Forest genetics research includes scientific study of variation and inheritance in trees and development of techniques for producing strains or hybrids which are superior in growth rate, wood quality, resistance to insects, diseases, and other damaging factors, or special value for use in environmental improvement.



Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	2	5	64
Studies .....	255	209	1,470

Examples of Short-Term Research Accomplishments

Wildland resource information system developed for management planning. The kinds of information needed to develop management plans for large acreages of wildland are becoming increasingly diverse and complex. A large-scale Wildland Resource Information System (WRIS) has been developed for this purpose in California. WRIS is a computerized production tool for collecting, processing, storing, retrieving, updating, and displaying geographic data. Although functionally oriented toward timber management, WRIS can be applied to land use planning in general. The system has exceptional utility in the continuous processing of large volumes of map data by a very small operating staff.

New management guides available for partial cutting in lodgepole pine. Forest managers in the central Rocky Mountains face the problem of adjusting timber harvesting practices in old-growth lodgepole pine forests to meet the needs of all key forests uses. New guidelines are now available to aid the forest manager in developing alternatives to clearcutting to meet different stand conditions and wind-fall, insect, and disease risks. These guidelines provide the manager with cutting options that permit the maintenance of forest cover in recreation areas, travel influence zones, and scenic areas.

Evaluation system established for Allegheny hardwood regeneration. Regeneration is often difficult to obtain after harvest cutting in the cherry-maple forests of the Allegheny Plateau because of excessive browsing by unusually large deer herds. Where advance reproduction is abundant, clearcutting is recommended. Where advance reproduction is inadequate, a shelterwood cutting system is more appropriate. Where recreation and esthetics are especially important and development of tolerant species such as beech, hemlock, and sugar maple is not objectionable, harvesting of individual trees may be appropriate. These prescriptions are presented in a new guide that permits managers to evaluate the regeneration potential of Allegheny hardwoods before they are cut.

Flexible guidelines developed for uneven-aged management of northern hardwoods. New concepts and research findings are included in an updated guide for uneven-aged management of northern hardwoods in New England. Emphasis is on adequate regeneration of valuable species, options for growing stock size and distribution, and the development of a permanent and practical road system. The new guidelines provide for flexibility in practice to meet a variety of situations and owner objectives.

Hypothesis explains how plant growth, maturation, senescence, and death may be regulated. Physiological processes controlling plant growth and development are complex. Certain classes of genes are believed to control the production of enzymes (organic catalysts) that govern the rate of biochemical reactions and thereby all physiological processes. However, the mechanism through which catalytic properties of enzymes are activated and deactivated is imperfectly understood. A new thesis on growth-regulating molecular systems may revolutionize existing knowledge.

Direct seeding guidelines available for the sandhills of the Southeast. Scrub hardwood-dominated sandhills of low value in Florida, Georgia, and the Carolinas have the potential for producing millions of tons of pine pulpwood and related products annually. Conversion to pine can be done by planting seeds at prescribed depths when records of climatological data indicate that temperature and rainfall patterns are likely to be most favorable for seedling establishment. The unique





planting requirements for seed of slash, longleaf, and two sand pines have been identified. New guidelines from the research provide resource managers a fast and less costly alternative to planting seedlings on millions of acres in the sandhills.

Temperature, light, and aeration affect rate of nutrient uptake. The rate at which nutrient ions flow to roots of intact plants from soil solutions and the external factors affecting them are poorly understood. When some of these relationships were examined by substituting nutrient solutions and using a test environment in which temperature, light, and oxygen content were controlled, slash pine seedlings absorbed nutrients and water at differing rates. Relatively warm temperatures and good root aeration were required for continuous rapid absorption of ions. With additional information of this type, researchers will be able to tailor forest fertilization prescriptions to local environments.

Short rotations and close spacings provide maximum poplar yields. To maximize wood yields intensive cultural methods and improved genotypes must be developed and tested. Very short rotations (3 years) of *Populus* species grown at spacing of 9 x 9 inches produced over 4 tons/acre/year of dry weight wood in northern Wisconsin. Wood-quality traits were well within the ranges reported for *Populus* pulpwood. Differences in yield between two clones demonstrate the potential for making gains through genetics. This maximum fiber yield approach appears to be an alternative for meeting increased demands for pulpwood in the Lake States.

#### Example of Long-Term Research Accomplishments

Greenhouse-containerized seedling system developed. A new concept in reforestation was needed to reduce production time and losses in handling and transportation of bare-rooted seedlings, improve planting survival, and conserve use of costly "superior tree" seed. Containerized tree seedlings raised in a modified greenhouse environment had the potential for meeting this need provided that knowledge on the biological requirements of tree seedlings grown under controlled conditions could be developed.

Development of the concept emerged through research in Federal, State, private, and university research organizations. Forest Service research was conducted in the South and the Pacific Northwest but the focal point was the Shelterbelt Research Laboratory at Bottineau, North Dakota, where obstacles involving design and testing of containers and greenhouse facilities and environment were overcome. In the short span of years since 1968 the concept has become operational.

The leadership position of the Bottineau Laboratory attracted the interests of other organizations working on the same problems. Subsequently, a highly successful international symposium on "Containerized Forest Tree Seedlings" was held. Published proceedings of this symposium have become a recognized worldwide "State-of-knowledge" and "how-to-do-it" handbook.

Aware of the usual developmental problems associated with new concepts, public and private organizations are cautiously implementing the greenhouse-grown containerized system of raising tree planting stock. However, the momentum is increasing. This confidence is traceable in large measure to excellence in research at Bottineau where the biological requirements of the trees were melded with the realities of efficient mass production of planting stock.



FOREST WATERSHED MANAGEMENT RESEARCH  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$7,709,000	268
Transition quarter .....	(2,694,000)	
1977 .....	8,043,000	280
1978 .....	8,510,000	292
Change .....	<u>+467,000</u>	<u>+12</u>

An increase of \$467,000, with an increase of 12 permanent full-time man-years, is proposed as follows:

- (1) To accelerate research on methods to minimize and prevent nonpoint pollution caused by forestry activities in order to meet the requirements of PL 92-500 and still allow adequate flow of forest goods and services, \$383,000.
- (2) To provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services, \$84,000.

Watershed management research is conducted to:

- (1) Develop methods and techniques for managing forest-related watersheds to protect and improve soil and water quality, improve the yield and timing of water flows, and restore and rehabilitate degraded landscapes.
- (2) Develop adequate means of protecting soil and water resources, especially on fragile or unstable soils, while forest and forest-related lands are being managed for other products and services.
- (3) Provide basic knowledge of vegetation, soil, and water relationships in wildland and related forest areas.

Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	1	6	24
Studies .....	107	78	508

Examples of Short-Term Research Accomplishments

New model developed to predict water and sediment from storms on small watersheds. One of the major problems in land-use and watershed planning is predicting what effects management practices would have on erosion and sediment transport. A computer model was developed that simulates the physical processes by which water and sediment are moved overland and through stream channels. The model predicts water and sediment yields at downstream locations. Initial tests on watersheds in Arizona have been very encouraging. This model presents a major advance in portraying the erosion process in a way that will be useful to the land manager for evaluating effects of alternative management practices.



Sediment stored in channels should not be overlooked as a factor of watershed erosion. The role of sediment storage in channels, previously overlooked, was studied in channels draining seven small forested watersheds in Idaho. The change in stored material was measured annually. Extremely large volumes of sediment were trapped behind obstructions and about 10 percent of the stored sediment moved downstream each year. This study illustrates the need to include measurements of stored channel sediment and its movement when calculating sedimentation as an index to erosion caused by forestry activities.

Conventional timber harvest does not impoverish soils in Eastern forests. Present knowledge indicates conventional harvest practices pose no threat to continued forest soil productivity. Additions to the soil nutrient capital by rainfall, rock weathering, and biological processes replace nutrients removed from the site by timber harvesting. Continued assessment of soil fertility and tree nutrition is underway to evaluate shorter than normal cutting rotations and more complete tree utilization.

Shredded bark mulch aids in reclaiming extremely acid mine spoils. Mulch, in addition to lime and fertilizers containing nitrogen and phosphorous, was required for successful establishment of grasses and legumes seeded on extremely acid spoils at Pennsylvania and Kentucky study sites. Only a sparse vegetative cover became established where just lime and fertilizer were applied, but where a mulch of shredded bark was added, a good cover of grasses and legumes was established. The mulch reduced evaporation and maintained moisture in the rooting zone. Reclamation of problem spoils is necessary for controlling erosion and restoring esthetic and productive land-use values.

Dicamba, an alternative for 2,4,5-T, does not degrade water quality. Control of hardwoods is vitally important in the establishment of Douglas-fir seedlings on Pacific Northwest forest lands. Dicamba, applied in forest plots at the rate of 1.12 kg/ha, showed no detectable residue in streamflow 37 hours after application. Based on toxicity characteristics and its short persistence in water, dicamba residues pose no acute hazard to aquatic organisms or to downstream water users. Dicamba can be used for brush control on forest lands with little or no impact on aquatic environment if direct application to surface waters is minimized by using appropriate spray techniques.

Stream chemistry can be used to monitor environmental impacts of ski area development. Monitoring the chemistry of streams provides a means of testing the impacts of ski area development on sensitive forest ecosystems. In this Rocky Mountain study conducted by the Eisenhower Consortium, road salting was found to severely affect water quality. Sewage disposal affected inorganic water quality to a minor degree. Poma lift construction and tree removal had no measurable effects on the water quality parameters measured. This analysis indicates that analyses of stream chemistry is a useful index for estimating environmental consequences of activities associated with ski area development.

Special logging systems can be used in environmentally sensitive areas. The impact of five logging systems on soil surface disturbance, erosion, and understory vegetation was compared under post-fire salvage conditions on the east slope of the Cascade Mountains. Traditional systems included tractor skidding over bare ground and cable skidding. Advanced systems included skyline, helicopter and tractor skidding over snow. Traditional logging systems caused more severe soil disturbance and consequent erosion than advanced systems. The results provide guidelines for forest managers who seek to maximize forest use with a minimum of environmental impact.



Example of Long-Term Research Accomplishment

Blowing snow management. Blowing snow has been a continuing problem for resource managers, highway engineers and maintenance personnel, recreation area managers, and others. A 10-year research program has provided the means to manage blowing snow and turn it into a valuable water resource.

Snow drift management is illustrative of these research results and their application. Research has shown that snow drift management can be an effective means of improving late season water yields from alpine areas. This is done by strategically locating snow fences where they will magnify the drifting effect of natural terrain breaks in critical watersheds. Snow fences can also be used as a safety item to control hazardous blowing and drifting snow on highways and in avalanche-prone areas.

The knowledge of snowdrift patterns behind fences in irregular terrain is being used by Colorado Division of Game, Fish and Parks in conjunction with wildlife improvement projects. Ski area managers find the fences useful for providing snow for wind swept trails and for keeping unwanted drifts from parking lots, avalanche paths, and trails. The Wyoming Highway Department is using these concepts to design an effective fence system for protecting a major interstate highway plagued by blowing snow.

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research.

2. The second part of the report is a detailed description of the methodology used in the study. It includes information about the sample size, the data collection methods, and the statistical analysis techniques.

3. The third part of the report is a discussion of the results of the study. It presents the findings of the research and discusses their implications for the field of study.



WILDLIFE, RANGE, AND FISH HABITAT RESEARCH  
(All operation and maintenance)

	<u>Permanent full-time man-years</u>
1976 .....	166
Transition quarter .....	(921,000)
1977 .....	185
1978 .....	197
Change .....	+12

An increase of \$464,000, with an increase of 12 permanent full-time man-years, is proposed as follows:

- (1) \$398,000 to accelerate research to provide the knowledge needed to assure resource management activities are compatible or beneficial to the habitat needs of endangered and threatened species under terms of the Endangered Species Act of 1973 and thus avoid or minimize litigation under Section 11(g) of the Act which provides judicial remedy to any person on his own behalf who believes any provision of the Act is being violated.
- (2) \$66,000 to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

Land management decisions must be made with full knowledge of the probable impact upon habitat productivity. Where competitive uses exist and where habitat values are low, more effective management systems are essential for rapid improvement in the years ahead.

Wildlife, range, and fish habitat research is conducted to maintain and increase the diversity and productivity of fish and wildlife, as well as domestic livestock populations by:

- (1) Defining the habitat requirements of the many species of fish, wildlife, and livestock.
- (2) Assessing the impact of alternative land use practices upon habitat values.
- (3) Generating strategies to optimize the habitat values of forests and ranges.

Changes in Research Work Units and Research Studies.

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	1	1	21
Studies .....	68	58	284

Examples of Short-Term Research Accomplishments

Techniques for estimating salmon and char populations developed. Land managers and biologists needed a reliable technique for estimating fish populations in southeast Alaskan streams. Through research in the Pacific Northwest, techniques were developed to obtain reliable estimates of fish production through a combination of trapping and electrofishing methods involving marking and recapture. These techniques provide an effective means to evaluate the impacts of non-fishing resources management alternatives directly on fish populations.



Comprehensive guidelines developed for managing ranges in the central and southern Rocky Mountains. Forest rangelands in the West provide cattle and sheep grazing and other important resources such as timber, wildlife, recreation, and watershed. Guidelines for managing ranges are needed to adequately provide national red meat supplies and to avoid conflicts with other forest uses. Based on over 70 years of Forest Service research and management experience, range management prescriptions were developed for proper livestock stocking, coupled with proper grazing systems and range improvement practices in six important ecosystems in the central and southern Rocky Mountains. The ecosystems range from southwest chaparral to mountain grassland and alpine. These guidelines provide an opportunity to improve the economic and biological aspects of range management in this region.

Improved livestock management scheme developed for semidesert ranges. Semidesert rangelands are important for raising livestock and producing wildlife, and they are used for recreation to an increasing degree. All of these uses require a vegetative cover that can be maintained by management based upon an understanding of the ecological effect of particular uses on the vegetation. Forest Service research in Arizona provides information to improve vegetative management of the semidesert ranges. Grass yield was increased 52 percent following treatments controlling mesquite on semidesert experimental ranges. Benefits to livestock alone from increased grass production can repay control cost in about 6 years and improvement is expected to last 15-20 years. Research emphasizes that the number of cattle permitted to graze these improved ranges must be carefully regulated to avoid overgrazing and permanent damage to the range--especially during dry years.

Guidelines for coordination of elk and timber management developed in Montana. Elk in the Rocky Mountain West are often associated with timbered habitats where coordination between timber harvesting and elk management becomes mandatory. To avoid conflicts between timber and game managers, the Forest Service in cooperation with the Montana Fish and Game Department, University of Montana, and Bureau of Land Management, initiated research in 1970 to determine the effects of logging and road construction on movement, harvesting, and survival of elk. From this research in Montana, guidelines have been developed and distributed to land managers so that they may minimize elk disturbances associated with logging and road construction in ponderosa pine forest.

Introduced grasses can increase forage quality for deer and livestock in Ozark and Coastal Plain forests. Native forages are nutritionally deficient during winter in the southern forests. To remedy these deficiencies for wildlife and livestock, Forest Service research studied the adaptability of several introduced forage species for the Ozark and Coastal Plain forests of Arkansas and Louisiana. Introduced annual and perennial grasses adapted to cool seasons, markedly improved forage quality, especially during winter. Introduced cool-season and warm-season perennials produced more forage than native grasses under pine canopies. These results provide the manager with an opportunity for increasing the carrying capacity of Ozark and Coastal Plain forests for deer and livestock.

Carbon black used to uncover food on critical deer winter range. Snow depth is the most crucial factor limiting availability of forage for deer on many winter ranges. Forest Service research in Colorado studied use of carbon black on seven sites supporting desirable shrubs on both northerly and southerly aspects. In controlled studies, carbon black was sprinkled on the snow in critical areas of deer winter range. Snow melted to bare ground, exposing forage for deer one month earlier on treated than on non-treated areas. This technique is a means of increasing forage availability to deer when they are in poorest physical condition and when food needs are most critical.

Guidelines for including cavity-nesting birds in forest management plans available. Forest Service research, in cooperation with the Fish and Wildlife Service, gathered and summarized information about requirements of cavity-nesting birds such as owls, woodpeckers, chickadees, bluebirds, and others, for Arizona and New Mexico forests.



Traditionally, dead or unmerchantable trees are removed during a timber sale because they are a fire hazard. Managers now have been provided information that shows how important these trees are to maintenance of populations of cavity-nesting birds. This information is being used in planning timber harvests, environmental analyses, visitor information, and nature interpretations.

Techniques for studying the endangered timber wolf applied. The Endangered Species Act of 1973 has emphasized a need for knowledge about particular species of plants and wildlife so that management actions do not inadvertently jeopardize continued existence of such species. Forest Service research, in cooperation with the Fish and Wildlife Service, has developed and applied techniques for studying the endangered timber wolf in Minnesota. Research on radio-tracking of wolf packs has provided valuable knowledge about the behavior of the wolf. Definite evidence was found that sense of smell is used by the wolf for territory maintenance and may serve for other forms of communication within the wolf pack as well. These results provide part of the ecological and sociological knowledge of wolf behavior necessary to develop management techniques to ensure continued existence of the wolf.

#### Example of Long-Term Research Accomplishment

Initial guides for management of forest and range habitats for nongame birds developed. Nongame birds have been a neglected ecological and recreational resource. Until recently, nongame birds have not been seriously considered in decisions on land management. However, public awareness of this wildlife resource has highlighted numerous problems of management effects on the nongame bird populations.

Forest Service scientists for the past 8 years have studied nongame birds through habitat research efforts related to forest and rangeland management. These research efforts have increased in recent years in response to land managers' needs for management alternatives and guidelines. This research is now paying off with the development of initial guidelines for management of forest and range habitats for nongame birds for many locations throughout the United States. Based on Forest Service research, habitat diversity guidelines for nongame birds in coniferous forests of the Pacific Northwest are available; determination of the effects of urban development on nongame birds in the Northeast is partially completed; and silvicultural options for nongame bird values in the Eastern deciduous forests are available. Forest Service scientists and managers joined with other experts to prepare summaries of the state-of-knowledge about management of forest and range habitats for nongame birds. The resulting papers cover a variety of topics, including the interactions between people and birds; bird behavior and habitat management; the influences of forest and range management practices on bird populations; and agency management programs for nongame birds.

Proceedings from this symposium provide managers, biologists, planners, teachers, and the general public with the first authoritative summary of how to manage forest and range habitats for nongame birds.

Five thousand copies of the publication were distributed in response to requests within an 8-month period. Follow-up regional workshops and training sessions are taking place.



FOREST RECREATION RESEARCH  
(All operation and maintenance)

		Permanent full-time man-years
1976 .....	\$1,500,000	34
Transition quarter .....	(529,000)	
1977 .....	1,560,000	45
1978 .....	2,079,000	54
Change .....	+519,000	+9

An increase of \$519,000, with an increase of 9 permanent full-time man-years, is proposed as follows:

- (1) \$487,000 to accelerate research to provide knowledge to manage rapidly growing dispersed recreation activities such as hiking, backpacking and river running, and to keep such uses compatible with other forest outputs.
- (2) \$32,000 to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

Growing public demands for forest-based recreation opportunities has generated new needs for both public and private developments, new forest management requirements, new conflicts among users and resource managers, and new threats to both the quality of recreational experiences and the health of the natural resource base. Conflicts and environmental impacts faced by today's resource managers were quite rare only a few years ago.

Forest recreation research is being conducted to:

- (1) Develop new and better resource management practices which enhance amenity values.
- (2) Analyze and understand the interactions between people and forests, social and economic factors underlying outdoor leisure activities, esthetic quality of forest landscapes and environmental situations, trends in recreation uses, use and management of wilderness areas, and alternative management strategies for meeting the public demands.
- (3) Identify interrelations among recreation, environmental amenities, and other uses of forests and open spaces--and find better ways of coordinating these uses.

Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	2	0	7
Studies .....	49	31	92

Examples of Short-Term Research Accomplishments

Campsite spacing standards provided for roadless area management. Guidelines for campsite spacing and location in roadless areas to achieve certain standards of user isolation are important to wilderness and backcountry recreation management. Spacing guidelines have been developed to achieve proposed levels of sound insulation for three kinds of roadless setting based on remoteness--pristine, primitive, and portal--and for meadow, woods, and streamside locations in each. The guidelines were derived





from field tests and theory explaining how far noises will carry as influenced by environmental factors such as landform barriers, screening, and background noise. These findings now allow managers improved criteria to determine how many campsites can be allowed and how they might be optimally located in roadless area settings.

Methods developed for restoration of hiking trails. Increasing use of remote backcountry recreation sites in the Northeast is resulting in destruction of groundcover vegetation and a loss of the thin soil mantle. Various combinations of treatments were tested for reestablishing ground-cover vegetation on bare mineral soils. Results indicate that a combination of fertilization, liming, and fencing helps restore ground cover along popular hiking trails and backcountry recreation sites.

Ecological information aids Boundary Waters Canoe Area wilderness managers. Management options for the Boundary Waters Canoe Area in Minnesota require ecological information about plant communities, and the wildlife they produce. To fill this need, scientists have summarized both the vegetation and wildlife results of research activities of the last decade. Results indicate that vegetation, predators, and prey in the Boundary Waters Canoe Area are all adapted to a pattern of recurring disturbance by fire. Analyses further indicate that the composition of the plant communities is largely determined by time since last disturbance; original composition of the disturbed community; and severity of that disturbance. This research provides management with a clearer understanding of the factors that influenced present conditions, and thus a firmer basis for managing these environments in the future.

Conflicts among river recreation analyzed. In order to properly manage river-based recreational activities, it is necessary to understand the conflicts that may arise among various types of recreationists who use the river. For the Au Sable River in Michigan, research has shown that the main causes of conflict among canoeists, fishermen, and other river users, were caused by excessive numbers or distributions of users, different objectives among users, and behavior of users. Canoeists, for example, often are not aware of the effect of their presence on fishermen and the fish. Management alternatives such as zoning that take into account the potential conflicts of various users can provide for more harmonious river recreation.

Simulation model helps understand wilderness use patterns. Efforts to determine desirable modifications of wilderness use patterns through trial-and-error are time-consuming, often inconclusive, and generally inefficient. Research has developed a tool that enables a manager to test a variety of possible policies in a short time with a simulation model. Detailed information on use patterns and congestion enables him to evaluate and compare alternatives. This model is a useful, practical tool for wilderness management.

Wildland planning glossary developed for regional planners. Good communication in land-use planning requires interdisciplinary agreement about the meanings of relevant terms and concepts. A glossary has been designed to facilitate a common understanding and acceptance of the meanings of current wildland planning terminology. The glossary contains definitions of 1,400 terms--with 600 other terms cross-referenced to more preferred usages. The glossary provides a ready reference source where planners and managers can keep pace with the evolution of wildland planning terminology.

VIEWIT: A computer model for landscape management. Land management to enhance or protect esthetic values requires procedures for delineating the terrain visible from one or more points in the landscape. Research has developed a computer program called VIEWIT, that analyzes the slope, aspect, and area that can be seen from selected locations. The information is printed on a map overlay that is easy to compare with other land-use planning considerations. The system may be used by those having remote terminal access to the USDA Fort Collins Computer Center. VIEWIT has been used to plan timber harvesting operations, scenic trainways routes, transportation system alternatives, recreation developments, and fuelbreaks.



Urban forestry planning process provided for metropolitan planners. Land-use planners in and around urban centers need efficient techniques to manipulate and analyze the huge amounts of data involved in planning decisions. Research has developed a metropolitan planning process that allows planners to analyze areas threatened by natural and man-made hazards, and to define areas that are specifically suited for development without undue degradation to the ecosystem. The process can be used to predict land use trends resulting from urban sprawl and therefore is extremely relevant to decisions related to the social and economic well-being of people in densely populated areas.

Economic value of trees in urban development underscored. Urban planners need to know the economic value of trees on land available for residential development. Professional appraisal of simulated combinations of different amounts and distributions of trees on a 12-acre parcel of land showed that trees can account for as much as 25 percent of the total value. Scattered arrangements of trees were valued more highly than concentrated arrangements. Results strongly suggest that trees should be retained when wooded land is developed for residential use.

Huge economic value tied to recreational aspects of urban songbirds. The economic value of nongame birds is often overlooked in urban development programs. Yet, Forest Service research has shown that in 1974, expenditures related to bird watching--birdseed, binoculars, feeders, books, field guides, and camera equipment--amounted to \$500 million. These results suggest that there is ample justification to preserve and enhance wildlife habitats for nongame birds in urban environments.

#### Example of Long-Term Research Accomplishment

Landscape architecture research available for use by resource managers. Public awareness of the landscape as a scenic resource has expanded greatly. The public now assesses the everyday landscapes in which most Americans spend the major portion of their lives. This awareness--and the resultant legislation on Federal, State, and local levels--has put forth a challenge to ensure that "intangible" or "amenity" values enter into the resource management decision-making process.

To provide criteria for making landscape decisions, research over several years has examined the traditional qualitative values associated with landscapes from the perspective of design, conservation, and economics. Focus upon human responses to visual landscapes has been obtained from the work of environmental psychologists and designers. This information has now been synthesized into guidelines and working models useful to resource managers, and the National Forest System is incorporating the results into its management plans.



SURFACE ENVIRONMENT AND MINING  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$2,598,000	15
Transition quarter .....	(1,768,000)	
1977 .....	2,601,000	21
1978 .....	2,603,000	21
Change .....	+2,000	- -

An increase of \$2,000 is proposed for support services.

No change is proposed in permanent full-time man-years.

SEAM is a research, development and applications program designed to provide an innovative array of economical and effective surface mine reclamation alternatives which satisfy environmental, energy, and mineral needs. The direct end product of SEAM will be several demonstration areas where new techniques in planning of mining operations, new methods of rehabilitation, and environmental stewardship criteria can be evaluated and displayed.

SEAM is an on-the-ground problem-solving effort. SEAM is a partnership undertaking with land managers, the mining industry, and political jurisdictions. It is closely coordinated with ongoing Federal and State programs.

The development and application funds for SEAM in fiscal year 1978 will be used to continue work on five basic objectives:

- (1) Determine and evaluate the effects of mining and related activities on forest and rangelands.
- (2) Determine and evaluate the effects of mining and related developments on forest users and associated communities.
- (3) Develop alternative methods to minimize adverse impacts of mining on the forest and range environment and on forest users and associated communities.
- (4) Test, evaluate, analyze, and demonstrate alternative reclamation and planning methods.
- (5) Develop recommendations and disseminate findings.

Examples of Short-Term Research Accomplishments

Revegetation of coal stripmines in the Northern Great Plains. Without improved methods of reclamation, surface mining of coal in the Northern Great Plains will result in unacceptable environmental damage and loss of land productivity. At the Decker Mine in southeastern Montana, research is developing new ways to establish protective vegetation. Several treatments have been devised to grow a grass cover capable of adequately protecting the spoil material from erosion, and some treatments yield more grass than undisturbed land. But where treated topsoil is spread over the raw spoils before seeding with selected grasses, the production of grass is 2 to 5 times greater than on undisturbed rangeland. Grass production on raw spoils is only one-third that on undisturbed rangeland. Experiments on small plots indicate a high potential for restoring the productivity of these lands after mining and promising treatments are now being tested on a larger area.





Revegetating disturbed areas in the semiarid Southwest. Disturbed areas such as coal spoil banks and new roadcuts are increasing in the Southwest and revegetating these areas is especially difficult because of low rainfall. A 20-year watershed rehabilitation project has concentrated research on establishing fourwing saltbush and alkali sacaton grass, both of which are important plants native in this part of the country. Results of this research have now been summarized and provide guidelines and procedures for successfully establishing these plants on harsh sites where rainfall is less than 10 inches.

New mineral exploration techniques reduce environmental damage. Much damage can be done to natural resources by careless mineral exploration activities. To avoid needless destruction, SEAM has been cooperating with the Idaho Bureau of Mines and Geology to develop improved methods of mineral exploration. The study has resulted in new environmentally-sensitive approaches to geological reconnaissance and geochemical exploration. These techniques can be used by small operators to locate potential mineral deposits by means other than digging trenches at random. The new exploration approach was applied on the Salmon National Forest in Idaho in 1976.

Drilling techniques improved to insure accurate analyses of mine overburden. Advance information on the chemical and physical properties of rock strata overlying coal and other minerals is essential for effective reclamation planning. However, it is unknown to what extent the chemicals used in drilling compounds permeate the cores and affect accuracy of laboratory tests. SEAM has cooperated with the Bureau of Land Management and the Agricultural Research Service to study the problem on a mine in southeastern Montana. The study shows that with adequate care during drilling, excessive contamination of core samples can be prevented. This permits accurate laboratory analyses that will aid in developing more effective and less expensive reclamation prescriptions.

Reclamation methods developed for copper-cobalt mine. Serious damage to water quality and land productivity often follow mining of uranium, lead, copper, cobalt, iron and other metals at high elevations in western United States. The damage results from acid soils and acid mine drainage caused by mining. Two years of research on a copper-cobalt mine in central Idaho indicates that topdressing of acid mine wastes with selected overburden material, coupled with liming and fertilization are a highly desirable revegetation practice. Application of this research has good potential for reducing environmental damage associated with mining at high elevations.

Coordinated planning for mineral development in Utah. Federal and State efforts need to be coordinated in planning mineral and energy development. To improve coordinating mechanisms, SEAM sponsored a joint effort in Utah involving the Forest Service, Bureau of Land Management, the State Planning Coordinators Office, and the State Advisory Council on Science and Technology. Two energy and mineral development seminars were held for State and Federal agencies who have responsibilities to manage the development of Utah's energy and mineral resources. Several publications resulted, including a minerals map of Utah, and descriptions of Federal and State laws, economic and demographic impacts, social impacts, and possible conflicts with other natural resources associated with energy developments in Utah. An interagency group has been formed to continue the close coordination fostered by this effort.

MOSAIC: A new concept in reclamation planning. Land managers have long needed tools to accurately and objectively portray the visual impact of proposed mining operations to assist them in making complex and often controversial decisions surrounding mineral development. The SEAM program has now developed a computer based system called MOSAIC which provides an accurate low-cost drawing of the expected visual impact of mining and associated developments. MOSAIC can be used as a planning aid for such mining-related developments as roads, railroad spurs, coal slurry pipelines, surface mines, and transmission lines. MOSAIC helps bring discussions of these developments from the abstract to the specific by providing





decisionmakers, land managers, planners, mining interests, and the public an opportunity to visualize proposed development before any action is taken. MOSAIC will soon be used by industry to help plan and develop a large coal mine in Colorado.

Example of Long-Term Research Accomplishment

Reclamation research by SEAM is being put to use. SEAM is a Forest Service program, started in 1973, to develop and apply technology to maintain a quality environment while helping meet the Nation's mineral requirements. SEAM is a partnership with land managers, regional planners, mining industries, and political jurisdictions.

The program now involves three Forest Service experiment stations, six National Forest regions and sixteen universities. Altogether, SEAM-related work is being conducted in twelve Western States--Montana, North Dakota, South Dakota, Wyoming, Utah, Colorado, Nevada, New Mexico, Arizona, California, Idaho, and Washington. Fourteen other Federal agencies are now involved in the program.

Results of SEAM research are attracting wide attention and are being put into use. For example, several mining companies have expressed interest in the installation of reclamation studies on their holdings. Two oil shale companies and the U.S. Bureau of Mines are cooperating with Forest Service scientists to find ways of reclaiming mine spoils and spent shale in Colorado and Utah. Five demonstration projects have been established at the Decker Mine in Southeastern Montana, Goose Lake near Cooke City, Montana, the Navajo Mine in New Mexico, the Blackbird Mine in Idaho, and the Sheldon Mine in Arizona. Typical of these is the Decker Mine where initial results of SEAM reclamation research have now been applied to an eight-acre demonstration site. This project will have major importance in providing the basis for future reclamation in the Northern Great Plains.



FIRE AND ATMOSPHERIC SCIENCES RESEARCH  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$8,375,000	222
Transition quarter .....	(1,696,000)	
1977 .....	<u>8,698,000</u>	<u>241</u>
1978 .....	<u>8,769,000</u>	<u>241</u>
Change .....	<u>+71,000</u>	<u>- -</u>

An increase of \$71,000, is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

No change in permanent full-time man-years is proposed.

The fire research program develops knowledge and technology to reduce forest fire costs and to protect the quality and productivity of American forests. This research is designed to aid all private, State, and Federal agencies in protecting 1.2 billion acres of forest and watershed lands. Although research has aided in bringing about a major percentage reduction in total forest fire losses, increasing use of forest lands makes the forest fire control job more difficult than ever before.

Opportunities to make substantial savings through development of new technology for fire prevention and control are clearly evident. Timber losses now average 1.5 million acres of commercial forest land burned per year. Environmental quality degradation results from fires on some five million acres on all classes of lands each year. The current fire research program is focused on:

- (1) Fire prevention.
- (2) Fire hazard reduction.
- (3) Fire control systems.
- (4) Prescribed burning smoke management.

Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	5	6	18
Studies .....	80	32	169

Examples of Short-Term Research Accomplishments

Fire management decisions aided by knowledge of role of fire in lodgepole pine. Fire is an extremely important factor in the establishment and structure of lodgepole pine forests. Mortality factors, such as mountain pine beetle, competition, and fire itself cause ground fuels to accumulate in lodgepole pine stands creating a variety of potential fire intensities. The accumulation of ground fuels and related potential fire intensity follow two general rules: (1) fuel quantities and fire potential become predictably high as stands reach overmaturity; and (2) fuel quantities and fire potential in young and immature stands cannot be predicted from age alone. Proper management of lodgepole pine requires full awareness of the biological effects of fire. This examination of the relationships and interdependence between fire and lodgepole pine provides the forest manager with a clearer understanding of fire's role and will aid fuel management and fire management in this forest type.



Guides developed to improve fire retardant applications. Application of fire retardant chemicals was hindered by a lack of criteria to determine the amount of retardant needed for various fuel loads and fire intensities. The Northern Forest Fire Laboratory has developed a method to determine the optimal retardant concentration based on the total fuel load, the size class distribution of the fuels, and the chemical makeup of the fuel. The results have been applied to the nine standard fuel models of the National Fire-Danger Rating System and incorporated into Operational Guidelines for Air Tankers. A cooperative effort between South-eastern Area-State and Private Forestry and scientists at the Southern Forest Fire Laboratory has also produced a guide for using fire retarding chemicals in ground tankers. This provides fire managers in the South with current information on storing, mixing, and applying retardants and encourages on-the-ground trial and use. This guide for fire managers is useful, both as a general reference and as a how-to-do-it booklet. Both of these accomplishments will improve retardant use capabilities and reduce costs of application.

Weather observations for fire control automated. The Riverside Forest Fire Research Laboratory has developed and deployed a network of automated fire weather stations in the San Bernardino Mountains of Southern California. This network enables fire scientists to monitor, by remote control, the evolution and movement of wind and weather systems that produce some of the severe burning conditions that frequently characterize Southern California fires. In addition to its value for research on fire weather phenomena, the network provides up-to-date weather information for fire control operations.

Hazard to game fish from firefighting chemicals determined. The use of forest fire retardant materials applied by aircraft has increased dramatically--on National Forests alone, 14 million gallons were dropped on forest and range fires in 1975. These compounds can be toxic at high concentrations through the release of ammonia. Many of these fires occur in areas where lakes and streams contain valuable game fish, thus raising the possibility of damage to fish when retardants are dropped into or near the water during fire suppression efforts. A system developed at the Northern Forest Fire Laboratory permits a rapid estimate of the hazard to game fish. Application of this system permits assessment of the effects on fish habitat of retardants that enter a stream during fire suppression activities. This is expected to lead to better placement of retardants during fire control.

Multifunctional research tests a wide spectrum of forest residue treatments. Besides being wasteful, forest residues are a fire hazard and an obstacle to regeneration. In the Pacific Northwest, dragging a high-lead scarification device through cutover areas was found to be a suitable treatment for small diameter residue or brush, and burying was feasible in special situations, such as roadside cleanup or recreation area development. However, efforts to speed decomposition by applying chemicals have been disappointing. On the utilization side, less residue was found following the sale of small, low grade material on a per-acre lump-sum basis than when the sale was on a log scale basis. Incorporating this information into the current residue management guidelines will help assure the soundness of land management planning decisions and minimize fire hazards.

Advances in fuel modeling strengthen the National Fire-Danger Rating System. The National Fire-Danger Rating System (NFDRS) needs to be tied closely to local fuel situations so fire-danger evaluations can be more specific. Fuel models have been developed by the combined research of the Intermountain and Rocky Mountain Stations to provide the data needed for modeling the spread and energy release components of the NFDRS. These fuel models quantitatively describe the physical and chemical properties of fuel elements and fuel beds that govern flammability. Nine models currently describe broad vegetative types for rating fire danger and can be refined to give greater coverage and incorporate dynamic features such as seasonal variations in fuel properties. The NFDRS also requires precise knowledge of moisture content of fuels which, in turn, demands knowledge of the relationship between the environment and the transport of water liquid and vapor into the fuels. To facilitate



estimates of moisture content, two fuel moisture models were developed--one for coniferous forest litter and duff and one for heavy forest fuels. Use of these models will result in more skillful interpretation and application of the information provided by the National Fire-Danger Rating System.

#### Example of Long-Term Research Accomplishment

FOCUS - A Fire Management Planning Tool. In 1970, the Forest Service began a revision of fire planning on a national scale. A recognized weakness in previous planning efforts (usually done every decade) was the lack of an objective system to test planning decisions and provide defensible cost benefit information about alternative plans. FOCUS (Fire Operational Characteristics Using Simulation) was conceived and developed specifically to overcome this weakness. FOCUS is a computer simulation program designed to objectively test alternative fire plans for a given land management unit. FOCUS includes data covering road network, resource values, elevation, fuel type, fire occurrence, weather factors, available firefighting resources, and other information. FOCUS can, in a few seconds, compare any number of alternative plans for cost effectiveness. For instance, the fire manager can ask FOCUS the projected results of relocating air bases or fire stations; he can find out the effects of cutting his budget 10 percent or of initiating a fire hazard reduction program; or he can obtain objective predictions concerning any number of combination of other alterations in his fire plans.

By June 20, 1975, three FOCUS test units were completed and technology transfer was begun. In addition to eight Forest Service regions, teams from the Bureau of Land Management and California Division of Forestry have been trained in FOCUS use. Most of these teams developed operational FOCUS systems on one or more of their own administrative units. National Forest System and State and Private Forestry have each established a liaison position to help with the technology transfer.

By July 1, 1976, FOCUS I had been installed at Fort Collins Computer Center and was operational. With the availability of this new planning tool, there have already been several significant payoffs:

- Units with active FOCUS programs look more closely at the individual components of their fire plans and understand their contributions better. This is leading to better management practices and some changes in operational fire plans.
- Units, to a greater degree, are recognizing and quantifying the value of the cooperators' contributions to their fire plans.
- The California Division of Forestry (Mendocino Ranger Unit) presented FOCUS documentation to successfully justify their protection budget to their Department of Natural Resources and Finance. This improved communications between the finance department and the field.
- Based on FOCUS-developed information, the Sequoia National Forest cancelled a proposed expenditure of \$93,000 to purchase equipment and implement earlier fire planning procedure. FOCUS told the Sequoia that they should only purchase eight of twenty-two planned pickup pumper units, and instead of a five-place helicopter at one station, a two-passenger machine would suffice.

Looking to the future, the FOCUS concept offers the manager an impressive array of fire management planning tools. FOCUS is one example of a multi-year research program designed to aid both State and Federal resource managers. The implementation phase of FOCUS is now building up with sufficient research support to handle any problems that arise during its implementation.





FOREST INSECTS AND DISEASE RESEARCH  
(All operation and maintenance)

		<u>1/ Permanent full-time man-years</u>
1976 .....	\$18,958,000	502
Transition quarter .....	(4,357,000)	
1977 .....	<u>19,791,000</u>	<u>501</u>
1978 .....	<u>19,966,000</u>	<u>501</u>
Change .....	<u>+175,000</u>	<u>- -</u>

An increase of \$175,000 is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

No change in permanent full-time man-years is proposed.

The mission of forest insects and disease research is to provide the knowledge and technology to:

- (1) Define, measure, and evaluate the impacts of destructive insects and diseases on forest resources, and on wood in storage and use.
- (2) Detect, assess, and predict changes in the occurrence of these pests.
- (3) Reduce their numbers and impacts to tolerable levels by means of control techniques and management strategies that are ecologically sound, economically practical, and environmentally acceptable.

Current research is strongly oriented toward developing comprehensive integrated pest management systems for major forest insects and diseases.

Special emphasis is being given to:

- (1) Continuing work on the special forest insect program started in 1975. Intensive research and development will lead to control of three of the most important forest pests--the Douglas-fir tussock moth, Southern pine beetle, and the gypsy moth.
- (2) Understanding and quantifying the full impacts on forest resources of pests such as the gypsy moth, Southern pine beetle, Douglas-fir tussock moth, mountain pine beetle, spruce budworms, dwarf mistletoes and fusiform rust.
- (3) Finding and developing specific microbial and other biological agents for control of the gypsy moth, Douglas-fir tussock moth, root rots and similar major pests.
- (4) Finding and developing safer chemicals for suppressing or manipulating pest populations. These materials include systemic fungicides; insect attractants, repellents, deterrents, and other behavioral chemicals; as well as more selective, nonpersistent toxicants.
- (5) Developing specialized equipment and improved techniques for efficient and safe application of pesticidal materials to individual trees and to forested areas.
- (6) Developing technology to detect, monitor, evaluate, and reduce adverse environmental effects of air pollutants in forest and related ecosystems.

1/ Excludes following positions in other agencies that receive funds from the Forest Service: 1976, 22; 1977, 10; 1978, 4.



Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	15	5	44
Studies .....	135	141	588

USDA Combined Forest Pest Research and Development Program Accomplishments. Substantial progress has been made in developing tactics and strategies for controlling three damaging forest insects--gypsy moth, Douglas-fir tussock moth and Southern pine beetle. Four USDA agencies have combined resources with many universities, several States, and industry in this coordinated program. Recent findings include the following:

Gypsy Moth

Two insecticides registered for control of gypsy moth. Two insecticides Dimilin TM and Orthene TM have been registered with EPA for control of the gypsy moth. Both provide excellent foliage protection and population control. Dimilin TM, a pesticide with a new mode of action, inhibits molting of the caterpillar stages when applied at only 0.06 pounds active ingredient per acre. Even lower dosages appear possible. Neither of the two pesticides adversely affects nontarget organisms or the environment.

Douglas-Fir Tussock Moth

New insecticides suppress Douglas-fir tussock moth. Two biological control materials, a bacterial formulation called Thuricide TM and a natural occurring nucleopolyhedrosis virus, were registered with EPA. Effective control also has been achieved with three other insecticides--Orthene TM, Dimilin TM, and carbaryl--which are being evaluated for environmental effects in extensive field trials.

Susceptibility of forest stands to tussock moth can be identified. Douglas-fir and true fir forests most susceptible to the tussock moth can be identified by procedures developed in the Pacific Northwest. This new information permits determination of potential problem forests and allows changes in forest management practices to reduce the risks of outbreaks.

Southern Pine Beetle

Forest stand and site conditions predisposing Southern pines to bark beetle attack are identified. Outbreaks of Southern pine beetle occur most frequently in dense, slow growing, overmature pine forests which have deficient or excessive soil moisture. These findings will be used to predict risk of Southern pine beetle attack.

Two new chemicals are useful for bark beetle control. Extensive field tests have shown Dursban TM and Reldan TM to be effective for controlling Southern pine beetles in felled trees and logs. These insecticides are viable alternatives for chlorinated hydrocarbons previously used for bark beetle control.

Examples of Other Short-Term Research Accomplishments

Controls for dwarf mistletoe of ponderosa pine in the Southwest. Dwarf mistletoes are causing serious damage in one-half of the ponderosa pine forests in the Southwestern United States. To alleviate these losses a computer program and a user's guide have been developed which enables forest managers to improve the selection of management goals for infected stands. The program, which can accommodate a wide range of stand variables, will serve as a valuable tool for decision-making and thereby help to limit the damage caused by this disease.



Birds and small mammals carry dwarf mistletoe seeds long distances. The means whereby dwarf mistletoe seeds are spread over relatively long distances have been unknown. Radiotelemetry and live trapping have established that birds and small mammals frequent dwarf mistletoe infection centers and occasionally carry mature seeds on their bodies as they travel outside the infected area. Because these animals are capable of serving as vectors for this organism, forest managers in the North and West should take into account the potential for establishment of dwarf mistletoe in healthy stands especially along the routes of migrating birds.

Recommendations developed for limiting aspen losses in campgrounds. Deterioration of aspen in campgrounds is of serious concern to forest managers throughout the Rocky Mountain area. In Colorado, nearly 4 percent of the aspens are lost in campgrounds each year. Most of the loss is attributed to canker-producing fungi that invade camper-caused trunk wounds. To help overcome these losses research, in addition to determining the cause, has developed recommendations to serve as a guide for management of such areas. Included in these recommendations are: considerations for constructing campgrounds in a more durable forest-type, displaying interpretive signs showing users why they should not injure tree trunks, removing dead trees, and species conversion on a long-range basis to other trees less susceptible to visitor-caused injury.

Reducing wood borer losses in Appalachia. Wood-boring insects significantly reduce hardwood lumber yield and value in the eastern United States. A cooperative study by Forest Service entomologists and mill operators has demonstrated that oak-borers caused losses in West Virginia, Ohio, and Kentucky of \$24 per 1,000 bd. ft. of factory-grade red oak lumber produced. Scientists have found that less than 1 percent of the trees in an infested area are borer-infested at any one time. By identifying, cutting, and disposing of infested trees, land managers can improve timber stands and, at the same time, reduce borer infestations. Implementing this practice should cost less than \$3/acre and increase the value of each acre of oak timber by \$40, a total estimated value of \$600 million over the next 30 years.

Who's who among Southern pine seed and cone insects. Insects destroy 70 percent or more of the potential seed yields from genetically improved seed sources in the South's 7,000 acres of Southern pine seed orchards. Before orchard managers can consider insect control, however, they must know what insects are causing the damage and when it occurs. A guide has been prepared which includes color illustrations of damage and of adult and larval stages together with concise summaries of the biology, distribution, and importance of each insect species. Provided with this working tool and recently developed techniques to assess insect populations with light traps, orchard managers now have the basic information to develop damage assessments and control strategies for seed and cone-damaging insects.

Biological agents promise safer forest protection. Stable forest ecosystems provide unique opportunities to develop and apply efficient strategies of biological control for forest protection. Biological control involves introduction, augmentation, and manipulation of natural enemies--largely parasites, predators, and pathogens--of pest insects and disease-causing organisms. Recent successes have demonstrated the potential of biological controls. In the Lake States parasites have brought the larch casebearer, an introduced pest, under control and parasites introduced from the eastern U.S., Europe, and Asia are now established in casebearer populations in the northern Rocky Mountains. The use of an antagonistic fungus (*Peniophora gigantea*) can prevent heretofore serious losses to *Fomes annosus* root rot in the South. Field tests have confirmed the feasibility of truly integrated use of biotic agents against the gypsy moth. Treatment of an infested forest with a microbial insecticide (*Bacillus thuringiensis*) followed by releases of one species of parasite (*Apanteles melanoscelus*) provided greater reduction of the gypsy moth and foliage preservation than either agent used singly.



A forest tent caterpillar control for Southern tupelo-gum forests. The forest tent caterpillar has periodically developed spectacular outbreaks since colonial times in a variety of hardwood forest types. In Alabama and Louisiana, varying degrees of defoliation accompanied by growth loss and seed destruction occur annually on 1/2 to 3-1/2 million acres of Southern tupelo-gum swamp forests. Recent research has shown that trichlorfon (Dylox R) applied at three-quarters of a pound per acre provided nearly 100 percent control of this insect with minimal effect on associated nontarget organisms. Trichlorfon is now registered by EPA for use in Alabama and Louisiana. Now, for the first time, Southern land managers have an effective, environmentally acceptable insecticide to protect their tupelo-gum forests from the forest tent caterpillar.

#### Example of Long-Term Research Accomplishment

Christmas tree disease problems are now being controlled. Christmas tree production has shifted dramatically in recent years from a product harvested entirely from natural stands to one that is based in large part on plantation-grown trees. These trees which are cultured and processed to produce a higher quality product than was formerly available have been readily accepted by consumers who must pay the increased costs associated with this production. Currently, plantation-grown trees are being produced on 450,000 acres of land and have an annual stumpage value of \$140,000,000.

With the increased values associated with cultured Christmas trees has come an increase in concern by producers for those diseases that reduce the marketability of their trees. Among the most damaging of these diseases are needlecasts and needle blights which cause needle discoloration and defoliation. A number of such diseases have been identified as having caused considerable damage throughout much of the North and West where Christmas trees are grown. A canker organism also has caused considerable damage to Christmas tree plantations by affecting branches and often killing entire trees.

Research was done to learn how to control these diseases of Christmas trees. For each disease the causal organism was identified and its basic biology studied. Based on this information, various control techniques were developed and tested. After evaluating the results of these tests, specific recommendations were prepared for protecting trees from infection by the individual disease-causing organisms. These recommendations include such procedures as planting only disease-free seedlings, avoiding planting of various kinds of trees on certain sites, applying protective chemicals, and using disease resistant stock when available. With this information, producers are able to control presently known disease problems in their Christmas tree plantations. The utility and effectiveness of these techniques are confirmed by their general acceptance and widespread use by growers.





FOREST PRODUCTS UTILIZATION RESEARCH  
(All operation and maintenance)

		Permanent full-time man-years
1976 .....	\$11,252,000	407
Transition quarter .....	(2,904,000)	
1977 .....	11,800,000	420
1978 .....	11,861,000	420
Change .....	+\$61,000	--

An increase of \$61,000 is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

No change in permanent full-time man-years is proposed.

The productivity of the land and the growing capacity of forest trees provide a continuing supply of wood fiber. However, the need for wood, because of its magnitude and urgency, cannot be met simply by growing more and more timber. It must be supplemented by vastly improved utilization. Forest products utilization research provides basic knowledge about wood as well as the technologies to convert wood to useful products. This is essential for effective use of the Nation's available timber resources and is a necessary strategy in balancing the timber budget in the future.

Programs in forest products utilization research are conducted by Federal and State governments, universities, and private industry. Practically all the research concerning fundamental properties and characteristics of wood is done by the Forest Service and universities. A very few large industrial firms conduct the bulk of the applied research, primarily concerning quality control and the development of proprietary processes or products. Applied research by the public sector is primarily directed towards the many thousands of small manufacturers, landowners, or consumers for whom no other research capability exists. In aggregate the technological activities of this large group has a tremendous influence on the quality of management of the Nation's forest lands and it makes a highly significant contribution to employment and the well-being of a major part of the population that affects the vitality of regional and national economies.

Within the goals of supplying timber and improving environments, the focus of forest products utilization research is on:

- (1) Producing the knowledge and technology necessary for improved utilization practices.
- (2) Extending the service life of wood in use.
- (3) Utilizing wood and paper wastes.
- (4) Developing technologies to produce or conserve energy in forestry related activities.

Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	4	6	24
Studies .....	116	129	439



Examples of Short-Term Research Accomplishments

Large crossties from small trees. With shifts from oil to coal usage, the railroads are expected to increase their role in the transportation of fuels. This trend has already increased needs for crossties for new track and tie replacements. Faster trains and heavier loads require larger crossties, but large size timber from which to make the ties is becoming scarcer. A logical source of wood for large crossties is the enormous inventory of smaller sized hardwood trees in the South, East and Midwest. Using steel dowels and glue, 7 by 9 inch mainline ties can be manufactured by laminating together two smaller pieces cut from small logs. This application can help meet the need for crossties and provide a market to support expanded forest land management opportunities.

Chemical treatments increase pine resins with no processing problems. The natural oleoresins found in Southern pine wood are recovered during the kraft pulping process. These oleoresins are important in the production of turpentine and resin. They might be an important source of other chemicals in the future. Oleoresin yield can be increased several-fold when pines are stimulated by treatment with the chemical, paraquat. In a cooperative effort with 23 paper companies, paraquat-treated slash pine was pulped and information was obtained on the yields of tall oil (resin acids and fatty acids), turpentine, and pulp. Resin-soaked wood can be pulped without difficulty and without loss in yield or quality of pulp. Relative composition of the components of the resin acid, turpentine, and fatty acid fractions did not change significantly after paraquat treatment. No operating or processing problems were encountered in pulping the treated, resin-soaked wood.

New test facilitates genetic improvement of trees. The development of superior genetic strains of trees is rewarding but complex and time-consuming. For example, years of selective breeding of a promising genetic strain may go on before a crucially serious weakness in the strain is detected. Rapid growth rate is a commonly sought-after genetic trait that may now be predicted at an early stage by measuring the enzyme activity of cultures of callus tissue from promising strains. Aspen tissue, grown in the laboratory on synthetic medium, has been treated with growth hormones and the resulting effects on growth rate observed. The associated changes in enzyme activity are quantitatively related to growth rate. This reliable system for early prediction of growth rate will aid geneticists greatly in their attempts to develop superior trees.

Stronger, stiffer paper is possible through alignment of fibers. The stiffness and strength of paper can be greatly increased if the wood fibers making up the sheet are aligned rather than randomly oriented. On a weight basis, papers with highly oriented or aligned fiber mat can attain stiffness properties that surpass that of wood. It is difficult to mechanically align fibers from a pulp slurry. An improved technique has been developed for producing paper with a greater degree of alignment of fibers. This research approach permits the development of paper products with superior strength properties, longer-lasting paper products, and new uses for paper in higher-strength construction applications where it may substitute for timber and non-renewable plastics and metals.

Wood-waste sewage sludge mixture increases soil productivity. Many American communities are faced with problems of the disposal of municipal sewage or wood-processing wastes such as sawdust or bark. Both kinds of waste can be beneficial when used as a soil amendment. An obstacle to recycling sewage sludge to the land is that too much nitrogen may be released into the soil, surface runoff, or ground water. Wood and bark, conversely, tend to rob the soil of nitrogen as they decompose. By mixing sludge with wood wastes, it is possible to control the rate of nitrogen release to the soil and plants. Furthermore, the growth of crops is enhanced by fertilizing with sludge-wood-bark mixtures. This could turn local waste disposal problems into an asset for agriculture.



New shear strength data aids paper product design. One of the most serious types of failures in corrugated shipping containers is edgewise compression. This is analogous to buckling under stacking pressure. In order to determine more precisely the mechanisms of edgewise compression failures, a test was devised to measure the interlaminar shear stress-strain properties. The new data on laminar separations in paper under stress will aid in designing improved containers and other products using paper as a structural material.

More complete utilization supports tropical forestry. Large volumes of timber are available in the tropics. However, many tropical forests have been stripped of high value trees (high grading) and less valuable trees have been left to propagate the new forest. Utilization systems are needed to encourage more complete harvest and utilization; systems that enable a great variety of species to go into pulp and panel products. Correlations between wood density and tropical climatic life-zones now show that most species from within a climatic zone have similar processing characteristics. Pulp, paper and panel products have now been made up, using mixed-species samples, from within various Philippine climatic zones. There is some commercial activity in using mixed species. This research will encourage other applications which effectively increase wood supply and facilitate better reforestation practices.

#### Example of Long-Term Research Accomplishment

Extending sawtimber supplies with sawing innovations. Project STRETCH was initiated to improve conversion and utilization efficiency and literally stretch available resources to meet future demands. In the conversion of sawlogs to lumber, approximately one-half of the volume is recovered as lumber. Loss factors fall into two categories--those that are related to the mechanics of manufacture and those that are human in origin and related to the decision-making process. One of the goals of Project STRETCH was to develop a process in which a computer would make the decisions involved in converting logs to lumber. This objective has been accomplished. The recently developed system, named BOF for Best Opening Face, unerringly determines the best sawing pattern for each and every log and results in the maximum possible yield. Increases in yield depend on log size, but average about 10 percent. The system utilizes available electronic and mechanical equipment.

Five large sawmills have installed and implemented the BOF system. Eight additional mills have systems which partially utilize the BOF program or modifications of it. In making management decisions, at least 80 mills have used BOF's unique ability to analyze the complete sawing process, resulting in more efficient log-to-lumber conversion. As a part of the Forest Service sawmill improvement program evaluations using the BOF process were made in 525 mills. The total lumber production of mills using the BOF system or its derivatives is approximately 6 billion board feet annually. The value added of the lumber saved by BOF amounts to an estimated 90 to 100 million dollars at current prices.

BOF has, in the span of 2 years, become the generic term for the use of computers in sawmill decision-making. Sawmilling equipment manufacturers have designed a new equipment line to implement the system.



FOREST ENGINEERING RESEARCH  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$1,561,000	50
Transition quarter .....	(361,000)	
1977 .....	<u>1,633,000</u>	<u>54</u>
1978 .....	1,649,000	54
Change .....	<u>+16,000</u>	<u>- -</u>

An increase of \$16,000 is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

No change in permanent full-time man-years is proposed.

Forest engineering research provides direct support to managers and planners through development of essential new forest management technologies. Timber harvesting, transportation planning, and mechanization of other forest practices have engineering components that require systematic study. Solutions have far-reaching implications affecting many forest management practices.

Forest engineering research is focusing upon:

- (1) Producing the knowledge and least cost technology necessary for more efficient and environmentally sound harvesting and transportation practices and the efficient use of wood as an engineered material.
- (2) Developing the engineering systems needed to permit more effective and economical reforestation and silvicultural improvement operations.

Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	2	0	5
Studies .....	14	16	50

Examples of Short-Term Research Accomplishments

Potential of forest residues as an energy source shown in baseline study. Rising prices of fossil fuels have encouraged the search for alternative sources of energy for manufacturing processes. Forest residues that result from harvesting operations, disease and insect mortality, and blowdowns, represent an unused resource which could well serve as auxiliary fuel for forest-based industries. At the request of National Science Foundation, Federal Energy Administration, and Energy Research and Development Administration, the Forest Service conducted a feasibility study and report that outlines the potential of utilizing forest residues as a source of energy and substitutes for petrochemicals. The published report is now in wide demand by all sectors of industry as well as manufacturers of combustion equipment and other research organizations dealing with energy.

Planning logging operations in steep terrain. Forest managers require production rates and costs for alternative logging methods and harvesting operations. This is particularly true in steep terrain. Several logging systems, including high-lead, skyline, balloon and helicopter, were studied in the logging of old-growth Douglas-fir. In addition to on-the-ground studies, several simple desk top computer programs were developed to allow the logging manager to evaluate and choose the best log







yarding arrangements. These programs are now in wide use. The results provide forest managers with a means to estimate direct yarding costs which are a significant part of the total logging costs. This permits choosing the most cost effective system.

Forest road systems. Forest roads are a major investment in the access to forests for timber, recreation, and related uses. Proper choice of route location is equally important from an environmental standpoint. A simple and low cost method for road location has been developed to allow engineering planners to look at several road location alternatives on a given piece of land. This wide choice of alternatives, through the use of desk top computers, provides another computer method that greatly improves the cost and environmental effectiveness of road locations over past methods.

#### Example of Long-Term Research Accomplishment

Harvesting and processing northern hardwoods to improve utilization and forest management. One of the most pressing problems in northern forests is the thinning of vast acreages of overstocked stands. Thinning is required to achieve maximum production and to improve tree quality on nearly 32 million acres in the north-eastern United States. In general, the trees to be removed are small and have poor form. These adverse characteristics make harvesting very expensive unless it can be mechanized and maximum utilization of the trees is realized. A recently completed line of research in the Lake States shows that certain combinations of available highly sophisticated equipment can profitably thin northern hardwoods in stands considered unmerchantable with more conventional logging methods. This technology can be applied on a large percentage of northern hardwood pole stands to provide improved growth, quality, and value to the residual forest. It may also be possible to apply this type of thinning in other regions of the United States.

Once the tree is harvested, it must be processed to allow maximum utilization. One of the most efficient utilization systems is field chipping of the entire tree. Chips produced in the woods are ideal for bulk handling and transport; however, they contain bark and foliage which are contaminants to most end products. Research has recently developed two basic alternatives for removing bark and foliage. The first alternative is a mechanical system that effectively removes large quantities of bark and foliage. This bark and foliage removal system is now being tested in a commercial pulp mill. The second alternative treats and removes contaminants during pulping.



RENEWABLE RESOURCES EVALUATION  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$5,596,000	172
Transition quarter .....	(1,751,000)	
1977 .....	<u>9,406,000</u>	<u>213</u>
1978 .....	13,202,000	304
Change .....	<u>+3,796,000</u>	<u>+91</u>

An increase of \$3,796,000, with an increase of 91 permanent full-time man-years, is proposed as follows:

- (1) \$3,609,000 to strengthen the ongoing forest survey and to develop evaluations of forest and rangeland resources for the 1980 Assessment required by the Resources Planning Act of 1974.

The forest survey will be broadened from a principally timber orientation to a multiresource inventory, and the period between reinventories will be shortened from 15 years to an average of 12 to 13 years. Resource data analyses will be improved by development of new techniques to collect and integrate multiresource information and by the development of more comprehensive analyses of the State's forest industries and their relations to resource capabilities.

The 1980 Resources Planning Act Assessment will be a major update of the 1975 Assessment and will include analyses of multiresource use interactions. This budget also includes financial assistance to encourage States to participate in the preparation of the 1980 Assessment by compiling their sources of physical, social, and economic information, and by participating in the preparation of the assessment report.

- (2) \$187,000 to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941), and other support services.

Forests and rangelands in the United States vary greatly in productivity, ownership, availability for industrial as well as noncommercial use, and opportunities for management. Accelerating changes in renewable resource conditions result from changing land uses, timber growth, resource harvesting, and losses to destructive agents. Demands on renewable resource lands for a wide range of uses are also increasing. Consequently, up-to-date inventories of forest and rangeland renewable resources are essential to guide programs for production of forest and rangeland resource values.

The Forest and Rangeland Renewable Resources Planning Act calls for a Renewable Resources Assessment that must consider all forest, rangeland, inland water and associated lands in the United States, estimated to include 1.6 billion acres. The first assessment was transmitted to Congress in 1976 and will be followed by detailed assessments in 1980, and every 10 years thereafter. The assessment includes, in part:

- (1) An analysis of present and anticipated uses, demand for, and supply of renewable resources, including a consideration of the international resource situation.
- (2) An inventory of present and potential renewable resources, and opportunities for improving their yield of goods and services, with estimates of the investment costs and returns to the Federal Government.



- (3) A description of Forest Service programs and their interrelationships and relationship to public and private activities.
- (4) A discussion of policy consideration, laws and regulations which affect the use, ownership and management of forest, range, and associated lands.
- (5) A report on additional fiber potential in the National Forest System, potential for increased utilization of forest and wood product wastes, and milling and other wood fiber products fabrication facilities.

To provide the data and information base needed for the assessment, the Act requires a current, comprehensive survey and analysis of:

- (1) Present and prospective conditions of, and requirements for, renewable resources of forest and rangelands of the United States.
- (2) Supplies of these resources.
- (3) Present and potential productivity of the land.
- (4) Other facts necessary and useful in determination of ways and means to balance demands for and supplies of these resources.

#### Changes in Research Work Units and Research Studies

	<u>No. initiated or revised</u>	<u>No. terminated</u>	<u>No. active</u>
Research Work Units .....	2	- -	8
Studies .....	25	40	84

#### Examples of Short-Term Research Accomplishments

Initial Renewable Resources Assessment Transmitted to Congress. The Resources Planning Act calls for physical data and social and economic information about all the Nation's renewable resources of forest, rangeland, inland waters and associated lands. The initial assessment transmitted to Congress in February 1976 shows that the Nation's forest and rangelands have the capacity to produce much more of nearly all products and services. For example, the 1.6 billion acres of forest and rangeland, and the associated water, have the physical capacity to supply a wide variety of outdoor recreation activities well in excess of expected increases in demand. These same lands have the capacity to support much larger numbers of most species of wildlife and fish. Forage production from range can be nearly tripled, and timber growth on commercial forest land can be more than doubled.

These increases, however, cannot be taken for granted. The Assessment provided the basic data for the Recommended Renewable Resources Program which identifies the investments needed to increase the long-term supply of products and services from forest and rangelands.

North Carolina's future timber supplies estimated. A projection of North Carolina's prospective timber supplies estimates a 60 percent increase in available cut during the next 30 years. However, hardwoods could account for almost 80 percent of this increase. No prospective increase in pine acreage is indicated over the next 30 years.

Louisiana's forest situation analyzed. A recent survey of Louisiana's forests revealed a decline of 9 percent in forest area from 1964 to 1974. Softwood timber volume, however, increased 31 percent while hardwood volume declined 7 percent. Widespread clearing of bottomland forests in the Mississippi Delta was primarily responsible for the loss in hardwoods.



Southern pulpwood production analyzed. Southern pulpwood production in 1974 reached a record high of 49.1 million cords, a 4 percent increase over the previous year. Production increased in 10 of the 12 Southern States, with Mississippi posting the largest gain for the second year in a row. Softwood roundwood accounted for 47 percent of the Southwide increase, and hardwood residues added 32 percent of the gain.

Northern pulpwood production analyzed. Pulpwood production in the Northeast and North Central regions in 1974, including chipped residues, was 13.7 million cords. This represents an 11 percent increase over 1973. An outstanding 1974 production advance of 16 percent in the Lake States was partially offset by a slight decline in the Central States.

Alaska's Copper River Valley surveyed. The first intensive forest inventory of Alaska's Copper River Valley revealed a commercial forest area of over a quarter million acres with over 300 million cubic feet of growing stock. An additional 158 million cubic feet of timber is located on land not classed as commercial forest land because of low productivity.

Oregon's Blue Mountain area resurveyed. New techniques employed in a resurvey of Oregon's Blue Mountain area provided realistic classification of timber productivity with the result that almost a quarter million acres of land formerly considered commercial were reclassified as noncommercial forest land. Public agencies manage 76 percent of the commercial forest area and 89 percent of the sawtimber volume.

Iowa's forest situation summarized. Although Iowa has a relatively small proportion of its land area in forests, the 1974 survey showed a commercial forest area of close to 1-1/2 million acres. Iowa's roundwood production has dropped by 37 percent over the past two decades.

#### Example of Long-Term Research Accomplishment

Forest Land Ownership in the Northeast. In 1971, the Resources Evaluation Research Work Unit at the Northeastern Forest Experiment Station explored the feasibility of conducting a mail canvass of forest landowners in conjunction with the forest survey of the State of Delaware. A questionnaire was developed that would provide information on owners' attitudes and objectives as well as demographic descriptions. About 40 percent of the sampled owners responded to the mailed questionnaire. A canvass of the non-respondents was conducted by cooperating State personnel.

The initial study in Delaware was a success and the procedures have subsequently been applied in most of the 14 Northeastern States. Reports covering five States have been published and additional publications are in process.

The results of these studies, which have been well received, have exploded as many notions as they have confirmed. For instance, they have confirmed that forest-land ownership is extremely fragmented. In most States studied so far, the average tract owned is under 50 acres. It has often been implied that people buy forest land for the enjoyment of "green space." Yet, one of the persistently important reasons for ownership is the expected increase of the value of the land. Results show that few, other than owners of larger tracts, hold forest land solely for timber production. Although a relatively low proportion of the owners hold forest land for timber production, very few are adverse to timber harvesting. Of those owners who have harvested, very few gave a reason for harvesting that would indicate any form of stand improvement. Overwhelmingly, owners said they harvested because they needed the money or because the timber was mature. The typical forest landowner in the Northeast is somewhat older than the general population; also, he or she is more affluent and better educated, is not a farmer, and was probably raised in a relatively large town or city.





FOREST ECONOMICS AND MARKETING RESEARCH  
(All operation and maintenance)

		Permanent full-time man-years
1976 .....	\$3,951,000	134
Transition quarter .....	(1,029,000)	
1977 .....	4,133,000	140
1978 .....	4,163,000	140
Change .....	+\$30,000	- -

An increase of \$30,000 is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

No change in permanent full-time man-years is proposed.

Forest economics and marketing research seeks to improve efficiency of operations and economic benefits from use of the Nation's forest land for timber and other values, including water, recreation, range, and wildlife. Research is conducted on:

- (1) Uses and demands for wood products and other forest values to provide necessary inputs for assessing future demands on the Nation's forest lands.
- (2) Reducing costs in timber growing, harvesting, processing and product distribution to achieve more efficient use of available timber resources.
- (3) Timber growing and multiple use management policies and practices, including impacts on environmental quality, to provide guidelines for development of forest resources.
- (4) Evaluation of new technology to help guide implementation of a wide range of technical advances.

Collectively, the results of forest economics and marketing research constitute a major source of information for formulating forest management and use policies and practices at the national, State and local levels. Research findings are used by National Forest planners, State agencies and private individuals and firms who do not have the resources to conduct research themselves.

Changes in Research Work Units and Research Studies

	No. initiated or revised	No. terminated	No. active
Research Work Units .....	- -	1	19
Studies .....	44	51	167

Examples of Short-Term Research Accomplishments

Potential supplies of red pine sawtimber in the Lake States. Projections of red pine timber supplies for the Chippewa National Forest in northern Minnesota using special statistical techniques (Timber RAM) indicate that red pine sawtimber cut may be increased eightfold in the next 50 years. Red pine sawtimber supplies will increase in a similar fashion throughout the Lake States as the young plantations established since the 1930's mature, with potential harvest cut increasing from 30 million board feet to 500 million board feet for the region. Although small from a national standpoint, this increase represents a significant regional increase.



Response capability of the Southern pine economy. With continued increasing demands for Southern pine products, the Southern pine region's capability to respond could be limited because of a shortage of management talent in the logging industry. Studies show that a major supply bottleneck could develop in pulpwood logging; the answer appears to be the encouragement of well-managed logging firms to engage in multi-product logging. Results of such supply structure changes would be higher value markets for Southern timber products combined with higher wages for woods labor.

Economic importance of tourism in Montana. The economic values of all forest-based resources at local, regional, and national levels are needed in land use decisions involving trade-offs among forest uses. This study found that about one-fourth of each tourist dollar accrues to Montanans as income; the proportion is highest for motels and restaurants primarily dependent on tourists, and progressively less for incomes associated with hunting, fishing, and camping. It is unlikely that growth in tourism could offset income losses resulting from even moderate declines in timber harvesting. Further, there are many differences in the nature of the jobs and in secondary economic consequences of jobs in the two industries. Land uses favoring either industry have a variety of subtle consequences.

Economic feasibility of utilizing worn-out railway ties for energy. Disposal of worn-out railway ties is a serious problem in the rehabilitation of the Nation's rail transportation system. Track-side burning or chipping disposal presents environmental problems and, in many States, is prohibited by law. Economic studies at the Forest Service laboratory in Princeton, West Virginia, have identified potential uses for these wood waste materials through utilization for supplemental energy purposes at selected manufacturing locations. The basic concepts of the proposed system need to be pilot-tested. The full development of an economic use for discarded railway ties as an energy source would, in effect, provide savings in energy use and also eliminate a waste disposal problem.

Important developments in the insulation board, hardboard, and particleboard industries. Production of insulation board, hardboard, and particleboard has increased considerably in the last ten years, with consequent larger consumption of wood raw materials. Medium-density fiberboard (MDF), a recent innovation, represents a blend of processes and raw materials used by the particleboard and hardboard industries. By 1980 production of MDF board is estimated at one billion square feet (3/4-inch basis). Thin particleboard is an even newer product. It was estimated that 147 million square feet (3/4-inch basis) of this board was manufactured in 1973. These trends indicate the necessity to assess the impact of technological developments on the Nation's wood fiber resources. In the long run, the wood-base fiber and particle panel industries will have a competitive advantage over many other wood products industries because of their ability to use underutilized raw materials such as low quality roundwood and wood residue of both hardwood and softwood species.

A full tree field chipping system simulator. A model of a field chipping and trucking system was developed in the Lake States which allows loggers to design and operate systems to fit their unique timber and market conditions. Though limited to field chipping systems, it demonstrates in general how mathematical simulation can show both loggers and land managers the silvicultural and economic impacts of new harvest techniques. Better silviculture, more complete utilization, lower fuel and equipment costs, higher returns to the landowner, and lower product cost are the applied results.

Dutch elm disease control--performance and costs. Municipal programs in the north-eastern United States to suppress Dutch elm disease have had highly variable results. Costs for control programs were 37 to 76 percent less than costs without control programs in the 15-year time span of the study. Only those municipalities that conducted a high-performance program could be expected to retain 75 percent of their



elms for more than 20 to 25 years. Communities that experienced the fewest elm losses had a well-funded program, applied it conscientiously, and sustained their efforts over the years.

Economic case for genetic manipulation of short-rotation sycamore in the South. Silvicultural research indicates that high per-acre wood fiber volumes are possible from plantations of sycamore grown on very short rotations. This economic study extends the analysis to include an assessment of the profitability of these plantations. Estimates of costs, yields, and revenues indicate that profits from short-rotation sycamore are highest on best sites, at wide spacings, and with 4- and 5-year cutting cycles. Genetically improved stock that provides a 10 percent increase in growth would almost double net revenues. Genetic improvement that would insure adequate growth without fertilization would allow marginal sites to become profitable. Existing market limitations for chips from juvenile sycamore, high capital requirements for land and equipment, and more profitable alternative uses of the land tend to restrict opportunities in short-rotation sycamore for nonindustrial landowners. Industrial landowners, however, who also process wood fiber would find the sycamore option profitable, with internal rates of return as high as 17 percent under ideal conditions.

#### Example of Long-Term Research Accomplishment

Timber harvest planning on Western National Forests. In early 1975, forest research economists of the western stations were brought together in a research and development program to address major land management problems facing the Forest Service in the West. The team, joining timber specialists of National Forest System in an assessment of unprecedented depth, has completed a series of studies on allowable-cut planning.

The team estimated timber harvests and 37 kinds of social and economic consequences for a broad array of harvest planning systems, ranging from even flow to abrupt reduction of timber inventories.

The research economists have developed methods of estimating the effects of public timber decisions on private harvests, timber prices, wood product costs to consumers, and lumber imports. They have devised a process for gauging the distribution of wood-product costs among income groups and a system for projecting effects on investment in housing. A new technique permitted estimating impacts on industry concentration.

Research by the economics research and development program is providing key information for formulating and evaluating alternatives in timber harvesting scheduling on the western National Forests. Research on allowable cut planning under this program was completed in the fall of 1976, and the program redirected to address policy issues in National Forests of southeastern Alaska.



Type size:  
17x 14/22

STANDARD FORM 304-7  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised.  
504-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST RESEARCH

A-11-34a

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
FOREST SERVICE--Direct obligations:				
Personnel compensation:				
11.1 Permanent positions.....	45,427	11,864	51,065	53,950
11.3 Positions other than permanent.....	3,415	1,203	3,555	3,700
11.5 Other personnel compensation.....	186	75	190	200
<del>11.8 Special personnel services payments.....</del>				
Total personnel compensation.....	49,028	13,142	54,810	57,850
Personnel benefits:				
12.1 Civilian.....	5,079	1,271	5,618	6,015
13.0 Benefits for former personnel.....	75	41	15	.....
21.0 Travel and transportation of persons.....	3,028	1,016	3,335	3,575
22.0 Transportation of things ...	944	360	1,000	1,075
Rent, communications, and utilities:				
23.1 Standard level user charges.....	1,549	393	1,750	2,180
23.2 Other rent, communications, and utilities .....	1,295	351	950	1,020
24.0 Printing and reproduction.....	582	368	650	700
25.0 Other services.....	10,123	3,817	13,409	14,401
26.0 Supplies and materials.....	2,437	725	2,910	3,120
31.0 Equipment.....	1,744	1,485	2,000	2,145
32.0 Lands and structures.....	56	45	60	65
<del>33.0 Investments and loans.....</del>				
41.0 Grants, subsidies, and contributions.....	1,027	1,182	1,150	1,235
42.0 Insurance claims and indemnities.....	3	1	1	.....
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Subtotal, direct obligations	76,970	24,197	87,658	93,381
95.0 Quarters and subsistence charges .....	-19	-5	.....	.....
direct				
99.0 Total/obligations.....	76,951	24,192	87,658	93,381
(Mono cast: 22.18)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





Type size:  
17x 14/22

STANDARD FORM 304-7  
June 1974, Office of Management and Budget  
Circular No. A-11, Revised.  
504-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST RESEARCH

A-11-34a

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
FOREST SERVICE--Reimbursable obligations:				
Personnel compensation:				
11.1 Permanent positions.....	752	161	618	618
11.3 Positions other than permanent.....	123	79	128	128
11.5 Other personnel compensation.....	4	3	4	4
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	879	243	750	750
Personnel benefits:				
12.1 Civilian.....	98	19	70	70
<del>12.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	96	43	111	111
22.0 Transportation of things .....	25	11	26	26
Rent, communications, and utilities:				
<del>23.1 Standard level user charges.....</del>				
23.2 Other rent, communications, and utilities .....	46	29	68	68
24.0 Printing and reproduction.....	1	6	29	29
25.0 Other services.....	500	386	753	753
26.0 Supplies and materials.....	86	27	87	87
31.0 Equipment.....	92	31	93	93
<del>32.0 Lands and structures.....</del>				
<del>33.0 Investments and loans.....</del>				
41.0 Grants, subsidies, and contributions.....	113	127	113	113
<del>42.0 Insurance claims and indemnities.....</del>				
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Total reimbursable obligations.....	1,936	922	2,100	2,100
<del>99.0 Total obligations: Forest Service</del>				
	78,887	25,114	89,758	95,481

(Mono cast: 22.13)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5)



Type size:  
17x 116/22

STANDARD FORM 304-T  
June 1976, Office of Management and Budget  
Circular No. A-11, Reviled.  
304-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST RESEARCH

A-11-34a

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	10 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
ALLOCATION ACCOUNTS				
Personnel compensation:				
11.1 Permanent positions.....	291	57	217	217
11.3 Positions other than permanent.....	57	11	131	131
11.5 Other personnel compensation.....	4	.....	4	4
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	352	68	352	352
Personnel benefits:				
12.1 Civilian.....	41	9	41	41
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	45	24	46	46
22.0 Transportation of things .....	5	1	2	2
<del>Rent, communications, and utilities:</del>				
<del>23.1 Standard level user charges.....</del>				
23.2 Other rent, communications, and utilities .....	14	1	5	5
<del>24.0 Printing and reproduction.....</del>				
25.0 Other services.....	280	183	512	512
26.0 Supplies and materials.....	92	39	78	78
31.0 Equipment.....	45	54	83	83
<del>32.0 Lands and structures.....</del>				
<del>33.0 Investments and loans.....</del>				
41.0 Grants, subsidies, and contributions.....	1,184	301	1,150	1,150
Total obligations, allocation accounts .....	2,058	680	2,269	2,269
<del>42.0 Insurance claims and indemnities.....</del>				
99.0 Total obligations .....	80,945	25,794	92,027	97,750
<del>43.0 Interest and dividends.....</del>				
Obligations are distributed as follows:				
<del>44.0 Refunds.....</del>				
Department of Agriculture:				
Forest Service .....	78,887	25,114	89,758	95,481
Animal and Plant Health				
Inspection Service .....	509	219	682	682
Agricultural Research Service	365	160	437	437
Cooperative State Research Service .....	1,184	301	1,150	1,150

(Mono cast: 22.15)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5)



## DEPARTMENT OF AGRICULTURE

A-11-34b

## FOREST SERVICE

## FOREST PROTECTION AND UTILIZATION

Forest Research  
Personnel SummaryType size:  
178M/22STANDARD FORM 300-1  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Identification code	19 76 actual	19 TQ	19 77 estimate	19 78 estimate
05-96-1100-0-1-302				
FOREST SERVICE				
Direct:				
Total number of permanent positions .....	2,698		2,797	2,921
Full-time equivalent of other positions .....	410		399	423
Average paid employment .....	3,030		4,015	4,355
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
Reimbursable:				
Total number of permanent positions .....	44		34	34
Full-time equivalent of other positions .....	13		15	15
Average paid employment .....	70		64	64
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
ALLOCATION ACCOUNTS				
Total number of permanent positions .....	22		10	10
Full-time equivalent of other positions .....	4		8	8
Average paid employment .....	26		18	18
Average GS grade .....	9.03		8.99	8.95
Average GS salary .....	\$16,230		\$16,168	\$16,108
Average salary of ungraded positions .....	\$13,209		\$13,209	\$13,209

(Mono cast: 22.13)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5)









FOREST PROTECTION AND UTILIZATION  
STATE AND PRIVATE FORESTRY COOPERATION

		<u>Permanent full-time man-years</u>
Appropriation, 1976 .....	\$33,158,000	186
Appropriation, transition quarter .....	(9,862,000)	
Estimate, 1977 .....	<u>33,492,000</u>	<u>214</u>
Estimate, 1978 .....	24,743,000	214
Change .....	<u>-8,749,000</u>	<u>- -</u>

SUMMARY OF INCREASES AND DECREASES  
(On basis of adjusted appropriation--dollars in thousands)

	<u>Increase or Decrease (-)</u>				<u>Total Permanent Full-time Man-years</u>
	<u>Pay and Other Support Services</u>	<u>Program</u>	<u>Permanent Full-time Man-years</u>	<u>Total 1978 Estimate</u>	
<u>Cooperation in forest management and processing ..</u>	\$15	- -	- -	\$7,370	30
<u>General forestry assistance</u>	34	- -	- -	5,167	130
<u>Cooperation in forest tree production .....</u>	- -	- -	- -	345	3
<u>Cooperation in forest fire control--The program level of \$11,897,000 will provide for continued limited involvement in management of the Federal Excess Personal Property Program and will maintain technical assistance to the States and strengthen it in the national fire danger rating system and the fire information retrieval system. ....</u>	-16	-8,782	- -	11,861	51
<u>Total, State and private forestry cooperation ..</u>	33	-8,782	- -	24,743	214



FOREST PROTECTION AND UTILIZATION

STATE AND PRIVATE FORESTRY COOPERATION

Project Statement  
(On obligation basis)

Project	1976	Transition quarter	1977 estimate	1978 estimate	Change
STATE AND PRIVATE FORESTRY COOPERATION:					
(23) Cooperation in forest fire control .....	\$22,387,788:	\$7,212,398	\$20,659,000:	\$11,861,000:	-\$8,798,000
(24) Cooperation in forest tree production .....	323,989:	74,817	345,000:	345,000:	-
(25) Cooperation in forest management and processing .....	5,603,478:	1,464,707	7,355,000:	7,370,000:	+15,000
(26) General forestry assistance .....	4,017,917:	1,785,221	5,133,000:	5,167,000:	+34,000
Total obligations or estimate .....	32,333,172:	10,537,143	33,492,000:	24,743,000:	-8,749,000
Unobligated balance brought forward .....	-	-824,828	-	-	-
Unobligated balance carried forward .....	824,828:	-	-	-	-
Unobligated balance lapsing .....	-	149,685	-	-	-
Appropriation or estimate .....	33,158,000:	9,862,000	33,492,000:	24,743,000:	-8,749,000



## GEOGRAPHIC BREAKDOWN OF APPROPRIATIONS

## State and Private Forestry Cooperation

	1977 estimate	1978 estimate (in thousands)	Change
Alabama .....	\$1,036	\$773	-\$263
Alaska .....	777	352	-425
Arizona .....	305	135	-170
Arkansas .....	818	653	-165
California .....	1,775	1,104	-671
Colorado .....	586	377	-209
Connecticut .....	213	162	-51
Delaware .....	142	113	-29
District of Columbia .....	1,601	1,781	+180
Florida .....	1,205	840	-365
Georgia .....	308	951	+643
Guam .....	67	87	+20
Hawaii .....	123	110	-13
Idaho .....	790	390	-400
Illinois .....	352	280	-72
Indiana .....	302	217	-85
Iowa .....	170	132	-38
Kansas .....	431	274	-157
Kentucky .....	819	601	-218
Louisiana .....	932	662	-270
Maine .....	777	570	-207
Maryland .....	507	352	-155
Massachusetts .....	350	246	-104
Michigan .....	912	691	-221
Minnesota .....	700	464	-236
Mississippi .....	991	788	-203
Missouri .....	890	645	-245
Montana .....	571	331	-240
Nebraska .....	379	234	-145
Nevada .....	440	239	-201
New Hampshire .....	255	215	-40
New Jersey .....	478	298	-180
New Mexico .....	348	180	-168
New York .....	963	716	-247
North Carolina .....	1,188	967	-221
North Dakota .....	172	127	-45
Ohio .....	446	358	-88
Oklahoma .....	430	321	-109
Oregon .....	1,205	722	-483
Pennsylvania .....	854	693	-161
Puerto Rico .....	168	49	-119
Rhode Island .....	157	114	-43
South Carolina .....	960	711	-249
South Dakota .....	270	183	-87
Tennessee .....	900	687	-213
Texas .....	702	543	-159
Utah .....	361	228	-133
Vermont .....	247	211	-36
Virgin Islands .....	29	4	-25
Virginia .....	990	850	-140
Washington .....	1,305	659	-646
West Virginia .....	490	381	-109
Wisconsin .....	990	771	-219
Wyoming .....	315	201	-114
Total .....	33,492	24,743	-8,749



COOPERATION IN FOREST FIRE CONTROL  
(All operation and maintenance)

		Permanent full-time <u>man-years</u>
1976 .....	\$22,642,000	49
Transition quarter .....	(7,631,000)	1/
1977 .....	<u>20,659,000</u>	<u>51</u>
1978 .....	11,861,000	51
Change .....	<u>-8,798,000</u>	<u>- -</u>

A decrease of \$8,798,000 is proposed as follows:

- (1) A program decrease of \$8,782,000 which will reduce the grant portion of this program to \$10 million.
- (2) A decrease of \$16,000 in pay costs and other support services.

The Federal role in this program is to provide funds that serve as a catalyst in helping the States protect non-Federal forest lands. To a large extent this role has been accomplished. Many States realize the importance of providing fire protection and they fund their programs at a much higher level than the minimum amount required to earn their share of the Federal funds.

The reduction in Federal funds could, on the average, be offset with a relatively small increase in State funding. For example, in 1975, State funding was about \$144 million. This would have to be increased by only 6 percent to offset the proposed reduction in the fiscal year 1978 estimate.

Protection of the forested and non-forested watersheds from the effects of wildfire is a matter of public concern. Products and other resources from these lands--water, timber, and fiber products, recreation and wildlife--are vital to, and used by, all citizens of the United States. The Clarke-McNary Act of 1924 was enacted to encourage States to establish effective fire protection organizations. Most States have done this. During the first 5-year period (1924-28) an average of 262 fires burned 58,800 acres per million acres protected. An average of 138 fires burned 2,110 acres per million acres protected during the most recent 5-year period (1971-75). Protected acres increased from 284 million in 1924 to 726 million in 1975.

This program level will:

- Strengthen technical assistance to the States in the national fire-danger rating system and the fire information retrieval system.
- Provide for continued limited involvement in total program management of the Federal Excess Personal Property Program. This vital program--the life blood of fire protection for some States--allows them to upgrade and improve equipment in the face of continually increasing budget constraints.

A formula that applies uniformly to all 50 State cooperators has been used in past years, and will be used as the primary basis for making the allocation of 1978 funds. The planned reduction in fiscal year 1978 will have a significant impact on some, mostly relatively small, State programs. Details will be worked out with consultation and discussions with State foresters. The formula recognizes the two factors most directly related to fire control:

-----  
1/ Includes \$514,000 reprogramed to Cooperation in Forest Management and Processing.





- (1) Extent of the fire protection job.
- (2) State and local performance as represented by expenditures.

Each of these factors is given equal weight. The half based on need is termed the "regular allotment" and is determined by a periodic fire protection analysis. The half based upon expenditures uses the average of the most current 3-year State and private expenditures and is termed the "extra allotment." The total of these two parts becomes the Federal allotment to each State. A sliding scale is used to reduce the total allotment to bring total State payments equal to available funds.

The table following this section shows proposed financing.

#### Examples of Recent Accomplishments

The effect of keeping well trained and equipped fire control forces for fast initial attack was seen in calendar year 1975. Only 1,119,427 acres burned on lands protected by State fire organizations. This reflects a reduction of 15 percent compared to the most recent five-year average.

The State foresters and Forest Service completed the fire analysis study and it has been accepted by the National Association of State Foresters. This is a periodic study made to determine the cost of fire protection for qualifying lands under the Clarke-McNary Act. As a result of the study, the State foresters have recognized their responsibility to provide protection on an additional 77 million acres of qualifying lands.



## COOPERATIVE FOREST FIRE CONTROL

Project (23)

(in thousands)

2/

	1 /	Federal Allotments			
	State and Private	FY 1976	Transition quarter	FY 1977 (estimate)	3 /
	Funds Expended FY 1975				FY 1978 (estimate)
Alabama .....	\$3,083	\$635	\$203	\$566	\$305
Alaska .....	1,180	448	144	408	220
Arizona .....	302	77	23	75	47
Arkansas .....	1,913	588	188	526	284
California ...	43,836	1,300	427	1,173	632
Colorado .....	3,649	395	119	350	189
Connecticut ..	104	144	47	130	70
Delaware .....	71	71	22	66	47
Florida .....	10,171	765	246	685	369
Georgia .....	8,358	769	252	694	374
Guam .....	16	47	12	49	47
Hawaii .....	212	73	24	75	47
Idaho .....	1,486	407	134	367	198
Illinois .....	255	181	59	188	101
Indiana .....	120	115	37	119	64
Iowa .....	143	73	23	76	47
Kansas .....	394	301	90	261	141
Kentucky .....	1,975	475	152	424	228
Louisiana ....	3,848	682	220	612	330
Maine .....	1,879	557	178	498	268
Maryland .....	808	302	99	273	147
Massachusetts	897	259	84	231	124
Michigan .....	2,252	675	218	604	325
Minnesota ....	875	415	136	374	202
Mississippi ..	4,391	688	222	618	333
Missouri .....	2,067	568	185	512	276
Montana .....	1,447	329	89	272	146
Nebraska .....	815	262	78	227	122
Nevada .....	391	262	80	224	121
New Hampshire	541	153	48	135	73
New Jersey ...	1,145	332	106	297	160
New Mexico ....	567	100	31	104	56
New York .....	2,544	582	188	522	281
North Carolina	5,142	713	230	639	344
North Dakota .	215	69	20	65	47
Ohio .....	704	240	79	219	118
Oklahoma .....	977	356	111	317	171
Oregon .....	5,056	707	228	633	341
Pennsylvania .	3,683	570	181	508	274
Rhode Island .	283	89	29	81	47
South Carolina	4,367	670	215	600	323
South Dakota .	1,280	143	40	148	80
Tennessee ....	2,459	640	209	578	311
Texas .....	1,607	496	157	440	237
Utah .....	436	186	57	162	87
Vermont .....	87	80	26	82	47
Virginia .....	5,016	622	200	557	300
Washington ...	6,121	712	231	639	344
West Virginia	788	292	91	255	138
Wisconsin ....	3,307	664	215	596	321
Wyoming .....	603	184	55	190	102
Administration, inspec-					
tion, prevention and					
special services	- -	2,179	579	2,215	1,855
Reprogramed ..	- -	- -	514	- -	- -
Total .....	143,866	22,642	7,631	20,659	11,861



- 1/ Actual fiscal year 1976 data not available.
- 2/ While the amount available to a State may, if the allotment is small, exceed previously computed expenditures by that State, the actual payment to a State never exceeds State and private funds expended by or under the control of the State.
- 3/ Distribution on the basis of the formula. However, some adjustments will be made to minimize the effect of the reduction on the States that have relatively small programs.



COOPERATION IN FOREST TREE PRODUCTION  
(All capital investment)

		<u>Permanent full-time man-years</u>
1976 .....	340,000	3
Transition quarter .....	(51,000)	
1977 .....	<u>345,000</u>	<u>3</u>
1978 .....	<u>345,000</u>	<u>3</u>

No change is proposed.

This program provides financial and technical assistance to cooperating States in the production, acquisition, and distribution of tree seed and planting stock for forest and windbarrier plantings on non-Federal lands. Seed and trees thus furnished at modest cost form the backbone of current public forestation efforts which contribute to increased timber production and the enhancement of environmental values, including public recreation, wildlife habitat, and pollution abatement.

Program funds are used to assist the States in meeting the cost of seed extraction, seedling production, nursery maintenance, and other operations.

The procedure for allotment of funds provides for a project approach with funds to be allocated on the basis of projects which will be designed to stimulate more efficient nursery operations. Proposals to date include projects such as:

- (1) Containerized seedling production.
- (2) Mechanized seedling harvest.
- (3) Development of improved methods for seedling storage.

The number of trees that States shipped to landowners during each of the past four fiscal years follows:

<u>Year</u>	<u>Federal-State Cooperative Program</u> (Seedlings)
1973 .....	581,090,000
1974 .....	539,549,000
1975 .....	578,026,000
1976 .....	580,000,000 (est.)





REGULAR ALLOTMENTS TO STATES

	<u>FY 1977</u>	<u>FY 1978</u>
Alaska .....	\$12,000	\$12,000
Arizona .....	6,000	6,000
Colorado .....	7,000	7,000
Delaware .....	2,500	2,500
Guam .....	7,000	7,000
Idaho .....	10,000	10,000
Kansas .....	10,000	10,000
Montana .....	10,000	10,000
Nebraska .....	8,000	8,000
Nevada .....	12,000	12,000
New Jersey .....	2,500	2,500
New Mexico .....	12,000	12,000
North Dakota .....	12,000	12,000
Puerto Rico .....	3,000	3,000
Rhode Island .....	2,000	2,000
South Dakota .....	10,000	10,000
Utah .....	10,000	10,000
Virgin Islands .....	3,000	3,000
Wyoming .....	4,000	4,000

SPECIAL PROJECT ALLOTMENTS TO STATES

	<u>FY 1977</u>	<u>FY 1978</u>
Western herbicide studies, Oregon .....	\$15,000	\$15,000
Utah .....	- -	11,000
Nursery fertilization project, New York .....	15,000	15,000
Cooperative weed control, Alabama .....	20,000	20,000

Examples of Recent Accomplishments

Alaska built a greenhouse to produce five species of planting stock in containers. These seedlings were used in the first reforestation work by planting ever to be undertaken in Alaska.

A directory of forest tree nurseries in the United States was published to serve the buying public and the forestry profession.

A nursery equipment catalog was published to help the Nation's forest nurserymen evaluate, select, and acquire the highly specialized equipment needed for tree seedling production.

Containerized seedling production figures for 1975 exceeded first estimates by 16 million for a final figure of 64 million from 32 container nurseries.

The weed control special project at the Auburn University in Alabama has been instrumental in registering six pre-emergence herbicides for use in forest tree nurseries.



<u>COOPERATION IN FOREST MANAGEMENT AND PROCESSING</u> (All operation and maintenance)		Project (25)  Permanent full-time man-years
1976 .....	\$5,627,000	26
Transition quarter .....	(618,000)	
1977 .....	7,355,000	30
1978 .....	7,370,000	30
Change .....	+15,000	--

An increase of \$15,000, with no change in permanent full-time man-years, is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

Through State-Federal cooperative programs, technical assistance is provided to private nonindustrial woodland owners, loggers, wood-using industries, communities, and organizations concerned with the protection, management and use of forest resources. On-the-ground assistance is provided by State professional personnel with training and expert backstopping by Federal specialists.

Three-fifths of the productive forest land in the United States, or 296 million acres, is in the hands of nonindustrial private owners. Most of them are not managing their lands for forest products and services for a variety of reasons, including insufficient returns and lack of technical understanding. The program provides technical assistance to these landowners, through State service foresters, to increase the flow of timber and nontimber products and to improve environmental values. The individual owner decides whether to implement the recommendations.

The program will continue to give special emphasis to the role of the private consulting forester in providing assistance to the nonindustrial private landowner. Opportunities will be identified and developed for consulting foresters to establish and expand their forestry assistance operations.

Technical assistance is given to loggers, sawmill, and other plant operators to improve logging, processing and business methods to improve the supply of softwood lumber and plywood through the reduction of wood waste and increased utilization of wood residue. The program of technical assistance to sawmill operators through the sawmill improvement program and closely related activities will continue in fiscal year 1978. The emphasis is on expanding and improving the capability of the States in forest products utilization activities.

State forestry personnel provide specialized forestry assistance to rural development committees throughout the Nation. State personnel serve on State committees, sub-State units, and rural communities, thereby strengthening the overall effectiveness of local rural development efforts.

Technical assistance is provided in cooperation with the State forestry agencies in 50 States, Puerto Rico, the Virgin Islands, and Guam. Base level Federal appropriated funds are distributed to the States by formula which is applied to each State's need and performance.

- (1) Need is based on the number of small woodland owners in the State and the acres of commercial forest owned expressed as a percentage of the total in the Nation.
- (2) Performance is based on State funds expended in excess of Federal funds. The excess is determined for each State and then expressed as a percentage of the total excess for all States.



- (3) The average of the need and performance percentages for each State represents the State's share of total funds available for distribution.
- (4) Each State is guaranteed a minimum of \$30,000 or the amount it can match up to \$30,000.

Funds for the sawmill improvement and improved harvesting programs will be distributed separately based on targets developed in cooperation with the States. For the sawmill improvement program, targets will directly reflect the number of mill analyses planned by the States and indirectly, the additional product yields obtainable.

Major work accomplishments are shown in the following table:

<u>Major benefits</u>	<u>Unit</u>	<u>FY 1976</u> (actual)	<u>FY 1977</u> (estimated)
Assists to woodland owners .....	No.	102,000	130,000
Area of woodland involved .....	Acres	4,100,000	4,500,000
Area receiving assistance in tree planting and timber stand improvement .....	Acres	330,000	340,000
Assists to forest products operators .....	No.	15,200	20,000
Additional volume provided through improved utilization practices .....	M cu.ft.	151,000	250,000

The cooperative forest management program's technical assistance efforts complement the financial incentives provided through the Forestry Incentives Program (Title X, PL 93-86) as shown in the following joint accomplishments:

	<u>Program Inception to 9/30/76</u>
Tree planting and seeding (acres) .....	250,000
Timber stand improvement (acres) .....	260,000

#### Examples of Recent Accomplishments

A 1971 forest fire provided the impetus to a Greenup County, Kentucky, landowner to begin a forest management program. The fire caused the hardwood trees to deteriorate and led to a request to the State Division of Forestry's forester for advice on salvaging the timber. The contact convinced the owner he should consider the future forest. A detailed forest management plan was prepared by the service forester to guide the owner. Recommendations concerning the construction of fire breaks, site preparation, and tree planting in the burned acres, timber stand improvement on the remaining area, and fencing to protect against destructive grazing were made and are being implemented. The owner has entered into a long-term cost-sharing agreement under the Forestry Incentives Program. He has subsequently been honored for his forestry activities. His land is now a part of the American Tree Farm System.

A Florida landowner's inheritance of 280 acres provided the beginning point of cooperative technical assistance by the program forester. The impact of inheritance taxes provided the impetus but a well-rounded forest management program was the result and management recommendations are being implemented.

In another Florida case, a 29 year-old university professor and two associates invested in timber land with the idea of cutting the timber, selling the land, and reaping a nice profit. A contact with the Division of Forestry's program forester showed them how a greater return on their investment might be possible through proper harvesting and prompt regeneration of a new timber stand. A speculative money-making venture has been redirected to a forestry enterprise providing forest products for industry and periodic income for the owners.



The front range of Colorado is experiencing a severe infestation of mountain pine beetle. Many acres of dead and dying pine trees are the result. The most efficient means of control is sound forest management which improves and maintains the health and growth of the forest so the trees can repel the beetles' attack. The Commissioners of Boulder County have taken direct action to do this. They have hired a forester who will work under the direction of the Colorado State Forest Service to work with private landowners in installing forest management practices such as thinning of overly dense stands. A forest landowner association has been formed to serve as a focal point for the cooperative effort.

The owner of a forested tract in Ellis County, Kansas, contacted the State forestry agency for help in improving her land for sentimental as well as practical reasons. The land has been in her family for 70 years. Forest management recommendations were made in 1973. Action on these recommendations has occurred each year since then. Black walnut and green ash trees have been planted on a 5-acre tract. Timber stand improvement is underway removing cull trees and thinning overly dense stands. Crop trees are pruned to a 12-foot height. The landowner is interested in all resources on her land. Wildlife food and shelter have been provided by modifying the timber practices. Plum thickets have been left around the edge of planting area. Trees removed in site preparation are piled in the same area to furnish wildlife cover. The timber treatments have been stopped 75 feet from the edge of a river to protect against flooding and to stabilize the bank. The entire area has been fenced to prevent destructive grazing. Thirty acres of deteriorated woodland remain. The success of these initial practices has encouraged the landowner to renovate the remainder. The work done thus far serves as an excellent demonstration of forest management on the Kansas prairie.

Forestry opportunities in the Great Plains are also demonstrated in Nebraska where a timberland owner contacted the Department of Forestry's district forester for help in selling timber. An increased return was the result and led the landowner to request additional help in managing his 20-acre timber tract. A selective harvest of mature black walnut trees was made. This was followed by thinning and pruning of the remaining walnut trees and release of desirable seedlings. At the direction of the owner, all of these timber management practices have been carried out with due consideration for wildlife, erosion control, and recreation opportunities.

Forest products utilization. Technical assistance by State forestry personnel was instrumental in the establishment of a new hardwood sawmill in Kansas and reestablishment of a pine mill in Nebraska. Wood formerly wasted in timber stand improvement and logging operations now finds markets, and additional employment has been generated. At the Nebraska mill, the increase in timber harvest and manufacture has created jobs for about 20 persons, including loggers, truckers, and mill operators. In both cases, an especially important result was increased interest and activity to more intensively manage local nonindustrial private woodlands.

Mulch for landscaping roadsides of newly-constructed highways in New Jersey is now an important use for small, low quality trees removed in land clearing operations. In the past, clearing land for new shopping centers and housing developments simply generated large volumes of wood waste to be burned. Restrictions on open burning, reduced availability of landfill sites, and wider use of equipment to chip entire trees produced both solutions and problems. More uses for expanded supplies of chips were needed. Work by forest products specialists to acquaint State highway construction officials with the quality and volume of chips available within the State led to acceptance of this material for highway mulch. Attention of these specialists was then focused on New Jersey land clearing operators who are now channeling their chips into protective coverings for planted areas on highway rights-of-way.





Sawmill improvement program. A Louisiana sawmill is now recovering an additional three million board feet of lumber each year without any increase in log supply. That is enough lumber for 270 more houses each year. At the invitation of the sawmill operator, a Federal-State team conducted a short, intensive study of the mill's efficiency in sawing. With the aid of a computer, field data on logs and lumber were analyzed, and the operator was helped in identifying changes in sawing procedures and equipment to increase the lumber yield from each log. With similar product gains, this activity was repeated many times in sawmills in almost every timbered State.

Studies in 35 Missouri sawmills showed that recoverable waste amounted to 11 million board feet annually. Followup technical assistance is helping mill personnel tighten their operations to recover in lumber form much of the material that previously ended up as slabs, edgings, trim, shavings, and sawdust.

In Maryland, a mill sawing loblolly pine received help in implementing changes identified by the computer analysis as potential sources of increased lumber recovery. Without equivalent timber harvest, an 8 percent increase in lumber volume recovery was realized, about three-quarters of a million board feet of lumber per year for this plant. At an estimated value of \$150 per thousand board feet, increased product value of \$112,000 was obtained by changes in the current operation and without additional capital investment.



The following table shows financing (in thousands):

	1976	Transition quarter	1977 estimate	1978 estimate
Alabama .....	\$131	\$32	\$210	\$212
Alaska .....	30	8	30	30
Arizona .....	33	8	43	43
Arkansas .....	120	30	180	180
California .....	74	18	152	152
Colorado .....	55	14	72	72
Connecticut .....	35	9	45	45
Delaware .....	31	8	31	31
Florida .....	211	54	228	228
Georgia .....	213	55	302	302
Cuam .....	8	2	8	8
Hawaii .....	30	8	31	31
Idaho .....	44	11	69	69
Illinois .....	78	19	98	98
Indiana .....	65	16	90	90
Iowa .....	68	17	47	47
Kansas .....	37	8	44	44
Kentucky .....	162	40	199	199
Louisiana .....	103	26	140	140
Maine .....	99	25	137	137
Maryland .....	77	19	103	103
Massachusetts .....	43	11	51	51
Michigan .....	144	36	166	166
Minnesota .....	96	25	128	128
Mississippi .....	162	40	227	227
Missouri .....	159	40	182	182
Montana .....	57	15	79	79
Nebraska .....	36	10	36	36
Nevada .....	32	8	37	37
New Hampshire .....	73	18	80	80
New Jersey .....	45	11	50	50
New Mexico .....	45	12	60	60
New York .....	187	47	213	213
North Carolina .....	275	70	343	343
North Dakota .....	31	8	31	31
Ohio .....	105	27	136	136
Oklahoma .....	50	12	57	57
Oregon .....	65	16	157	157
Pennsylvania .....	164	41	218	218
Puerto Rico .....	31	8	32	32
Rhode Island .....	31	8	32	32
South Carolina .....	133	33	182	182
South Dakota .....	32	8	40	40
Tennessee .....	114	29	177	177
Texas .....	110	27	149	149
Utah .....	39	9	54	54
Vermont .....	78	19	103	103
Virgin Islands .....	10	3	10	10
Virginia .....	219	55	304	304
Washington .....	89	22	124	124
West Virginia .....	86	22	133	133
Wisconsin .....	182	46	227	227
Wyoming .....	33	8	37	37
Total to States .....	4,660	1,171	6,114	6,116
Forest Service administration	967	241	1,241	1,254
Reprogramming from Cooperation in forest fire control and general forestry assistance .....	- -	-794	- -	- -
Total appropriation or estimate	5,627	618	7,355	7,370



GENERAL FORESTRY ASSISTANCE  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
1976 .....	\$4,549,000	108
Transition quarter .....	(1,562,000) 1/	
1977 .....	5,133,000	130
1978 .....	5,167,000	130
Change .....	<u>+34,000</u>	<u>--</u>

An increase of \$34,000, with no change in permanent full-time man-years, is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941) and other support services.

General forestry assistance funds are used to accomplish highly specialized forestry assistance not available through other Forest Service cooperative programs. A major portion of the funds is used to provide professional assistance to State forestry agencies, woodland owners, associations, and the wood industry to enhance rural community development and to achieve more efficient management, increase production, and improve processing of the Nation's timber resources.

General forestry assistance funds are used to provide expert forest resource management and use assistance in such activities as:

- (1) Forest products utilization.
- (2) Dissemination of forest research findings.
- (3) Continuous forest inventory.
- (4) Organization management assistance provided to State forestry agencies.
- (5) Multiple use management.
- (6) Forest hydrology.
- (7) Wild and scenic river studies.
- (8) Threatened and endangered species.
- (9) Forest resource planning.
- (10) Special studies.

Technical assistance is provided directly by the Forest Service or through specific agreements with State foresters, colleges, and/or private contractors.

Examples of activities currently being conducted are:

- (1) Forest products utilization. State and Forest Service personnel, working closely with private consultants and university staff members are extending the Nation's supply of forest resources by determining new and better uses for logging and milling residues and low quality trees. The improved harvesting program helps logging operators to increase both the yield and quality of their product through improved falling and bucking practices.
- (2) Management assistance to State forestry agencies. Through cooperative efforts the Forest Service strengthens its management assistance to State forestry organizations. The purpose of this assistance is to help States improve their organizations, management skills and training programs. Improved skills will result in increased effectiveness in the protection and management of forest and related natural resources.
- (3) Wild and Scenic Rivers Act of 1968. The Forest Service has lead responsibility for the Department of Agriculture for making studies under the Wild and Scenic Rivers Act of 1968. In addition to the rivers assigned to the Department, the Forest Service will coordinate USDA input for 17 Department of the Interior led studies in fiscal year 1978.

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1/ Includes \$280,000 reprogramed to Cooperation in Forest Management and Processing.



- (4) Forest resource planning. Technical assistance and training is provided to State agencies in forest resource planning. This includes the help provided to States in making forestry inputs to the areawide waste treatment management plans (PL 92-500, section 208). Forest resource planning efforts assure that forest resources are incorporated in State and sub-State planning.

#### Examples of Recent Accomplishments

Improved harvesting program. Urban tree waste in Minnesota may face a different future as the result of a special project to evaluate utilization opportunities for this material. While the project is not yet completed, resource data already collected and initial results of processing and marketing evaluations have changed the waste versus use picture. Previously State and local government units had no concept of wood waste volumes in the Twin Cities metropolitan area and considered all diseased trees as waste products to be burned or buried. Now the State legislature has appropriated \$700,000 to be matched by local funds to construct utilization facilities. Further evaluations of the marketing and political aspects of establishing a wood waste processing facility are still underway, but increased utilization of these wood residues is already occurring, such as a power company's use of chips to augment its coal supply. Extension of the timber resource by recovery of an additional two million cubic feet of wood is the target of this project.

West Virginia logging operators were helped in evaluating their falling and bucking practices. Field data showed that more care in measuring log lengths and in deciding where to buck logs, coupled with proper techniques in falling trees and making bucking sawcuts, could increase recovery of saleable products from each tree. For two logging firms studied, potential gains from better use of trees amounted to 1.5 million board feet annually (an 11 percent improvement), valued at \$135,000. Followup training is helping logging crews learn correct falling and bucking practices for maximum product recovery.

In Wyoming, salvage and utilization of 40 million board feet of beetle-infested timber and improved forest management were made possible through a joint sale of timber from contiguous lands of mixed ownership. The sale is on lands of the Forest Service, Bureau of Land Management, U. S. Steel Company, and several small private owners. The State forest products utilization specialist led in coordinating pre-sale activities among the various forest landowners for the unified action needed to bring about harvest and management. Salvage cutting began in the fall of 1976. Dead material is being utilized for studs and house logs; live infested timber is being sawn into lumber.

Forest resource planning. Technical and financial assistance was provided to several State foresters in forest resource planning. Examples of accomplishments follow:

- (1) A forester/planner employed by the Alabama Forestry Commission developed a Statewide forestry analysis. Another planner hired in cooperation with the State forester's office and the Top of Alabama Regional Council of Governments (TARCOG) prepared a forestry analysis for the 5-county sub-State planning unit.
- (2) In Florida a forester/planner prepared generalized suitability ratings for multiple forest resource values. These ratings will provide the methodology and base data for county level planning as directed by the Florida local Government Comprehensive Act of 1973.





- (3) A forester/planner in New Mexico prepared "Guidelines for Natural Resource Planning." This was a cooperative venture between the New Mexico Department of State Forestry and the New Mexico State Planning Office. The publication was prepared in a popularized version and received wide distribution.
- (4) A forester/planner employed by the Pennsylvania State forester and working with the Governor's Office of State Planning and Development prepared a forestry policy section for "A Land Policy Program for Pennsylvania." A process was developed to map forestlands of the State by three capability classes. Forty-two percent of the counties in Pennsylvania were surveyed under this system.

Wild and Scenic Rivers. The Forest Service participated in developing wild and scenic river studies and environmental impact statements for Owyhee, Upper Mississippi, Pine Creek and Penobscot Rivers.

Pollution abatement planning. Forest Service personnel are working with State foresters, Section 208 agencies, and the regional offices of the EPA in all parts of the country. For example, Virginia was helped to analyze field data on forest related erosion and sediment. The Forest Service specialist in the West has worked on a procedure to assess erosion and sediment delivery from forest lands. The Forest Service worked as collaborators and consultants with many States to get forestry agency involvement and to help develop the forest related plan of work for Section 208 planning. A special project in Alabama is using the voluntary approach to implementing best management practices for water quality management. The results of this effort will help determine future direction for implementing Section 208 plans.

Threatened and endangered species. Needed technical expertise is being provided in response to specific requests for assistance from State forestry organizations. Examples are:

- (1) The Hawaii State forester asked for assistance in developing a State forestry program consistent with the objectives of the Threatened and Endangered Species Act. An indication of the complexity of this task is provided by a list of more than 800 proposed endangered plant species, 16 endangered bird species, and one endangered forest-related mammal.
- (2) Alabama requested assistance in developing the range habitat requirements and management implications for about 15 species of endangered forest-related plant species thought to be present in Alabama. A study of forest-related endangered plant species of the Southeastern United States was recently completed by the Forest Service and is being used to provide the necessary data.
- (3) The Maryland State forester asked for assistance in determining habitat management guidelines for the endangered Delmarva Peninsula fox squirrel. These guidelines will be used as a basis for assisting recovery of this species.

Range validation study. The State and private forestry participation in the Oregon Range Validation Area was initiated late in fiscal year 1976. The agreements between participating State and Federal agencies have been signed. The coordinated resource planning is well under way with three plans completed and five in process at the end of September 1976. Land treatment has been completed on 130 acres of private land and additional acres of treatment are being planned for fiscal year 1977. These activities are being coordinated with Forest Service research and National Forest management efforts in the study area.



# FOREST PROTECTION AND UTILIZATION

## Proposed Change in Activity Structure

Present Structure	:	Proposed Structure
	:	
State and private forestry cooperation:	:	State and private forestry cooperation:
(24) Cooperation in forest tree	:	(24) Cooperation in forest tree
<u>planting</u>	:	<u>production</u>
	:	

Minor change is proposed for a more descriptive title.



Type also:  
17a M6/99

STANDARD FORM 304-T  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised,  
304-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

A-11-34a

STATE AND PRIVATE FORESTRY COOPERATION

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
FOREST SERVICE--Direct obligations:				
Personnel compensation:				
11.1 Permanent positions.....	4,022	1,162	4,740	4,720
11.3 Positions other than permanent.....	214	71	234	245
11.5 Other personnel compensation.....	8	3	3	5
11.8 Special personal services payments.....	1	.....	.....	.....
Total personnel compensation.....	4,245	1,236	4,977	4,970
Personnel benefits:				
12.1 Civilian.....	520	142	554	560
13.0 Benefits for former personnel.....				
21.0 Travel and transportation of persons.....	719	190	674	650
22.0 Transportation of things ..	56	10	47	25
Rent, communications, and utilities:				
23.1 Standard level user charges	147	53	180	230
23.2 Other rent, communications, and utilities .....	-234	-30	-176	50
24.0 Printing and reproduction.....	50	82	44	25
25.0 Other services.....	-4,836	6,552	1,769	535
26.0 Supplies and materials.....	458	359	217	115
31.0 Equipment.....	96	34	73	50
32.0 Lands and structures.....				
33.0 Investments and loans.....				
41.0 Grants, subsidies, and contributions.....	31,112	1,909	25,133	17,533
42.0 Insurance claims and indemnities.....				
43.0 Interest and dividends.....				
44.0 Refunds.....				
direct				
99.0 Total obligations.....	32,333	10,537	33,492	24,743
(Mono cast: 22.18)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type also:  
17a MA/92

STANDARD FORMS **304-7**  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised.  
304-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
STATE AND PRIVATE FORESTRY COOPERATION

A-11-34a

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1100-0-1-302				
FOREST SERVICE--Reimbursable obligations:				
Personnel compensation:				
11.1 Permanent positions.....	26	1	30	30
11.3 Positions other than permanent.....	3	.....	5	5
11.5 Other personnel compensation.....				
11.8 Special personal services payments.....				
Total personnel compensation.....	29	1	35	35
Personnel benefits:				
12.1 Civilian.....	3	.....	4	4
13.0 Benefits for former personnel.....				
21.0 Travel and transportation of persons.....	4	1	5	5
22.0 Transportation of things .....	1	.....	1	1
Rent, communications, and utilities:				
23.1 Standard level user charges.....				
23.2 Other rent, communications, and utilities .....	1	.....	1	1
24.0 Printing and reproduction.....	.....	.....	15	15
25.0 Other services.....	598	109	589	589
26.0 Supplies and materials.....	-3	20	50	50
31.0 Equipment.....				
32.0 Lands and structures.....				
33.0 Investments and loans.....				
41.0 Grants, subsidies, and contributions.....				
42.0 Insurance claims and indemnities.....				
43.0 Interest and dividends.....				
44.0 Refunds.....				
Total reimbursable obligations.....	633	131	700	700
99.0 Total obligations.. Forest Service	32,966	10,668	34,192	25,443

(Mono cast: 22.18)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5)













RANGELAND IMPROVEMENTS

		<u>Permanent full-time man-years</u>
Appropriation, 1976 .....	\$700,000	1/
Appropriation, 1977 .....	700,000	1/
Estimate, 1978 .....	5,200,000	67
Change .....	<u>+4,500,000</u>	<u>+67</u>
Operation and maintenance .....	\$3,640,000	
Capital investment .....	<u>1,560,000</u>	

An increase of \$4,500,000, with an increase of 67 permanent full-time positions, is proposed.

The Federal Land Policy and Management Act of 1976 (PL 94-579, October 21, 1976) directs that 50 percent of the monies received by the United States as fees for grazing livestock on National Forests in the eleven contiguous Western States be credited to a separate account in the Treasury, and when appropriated, be made available for range betterment. One-half of the funds would be used in the district, region, or National Forest from which the funds originated and the remaining one-half of the funds would be applied for range betterment as the Secretary directs.

Section 401(b)(1) of the Act states:

Congress finds that a substantial amount of the Federal rangelands is deteriorating in quality, and that installation of additional range improvements could arrest much of the continuing deterioration and could lead to substantial betterment of forage conditions with resulting benefits to wildlife, watershed protection, and livestock production. Congress therefore directs that 50 per centum of all moneys received by the United States as fees for grazing domestic livestock on ..... lands in National Forests in the eleven contiguous Western States under the provisions of this section shall be credited to a separate account in the Treasury, one-half of which is authorized to be appropriated and made available for use in the..... national forest from which such moneys were derived, as the respective Secretary may direct after consultation with ..... national forest user representatives, for the purpose of on-the-ground range rehabilitation, protection, and improvements on such lands, and the remaining one-half shall be used for on-the-ground range rehabilitation, protection, and improvements as the Secretary concerned directs. Any funds so appropriated shall be in addition to any other appropriations made ..... for planning and administration of the range betterment program and for other range management.

Such rehabilitation, protection, and improvements shall include all forms of rangeland betterment including, but not limited to, seeding and reseeding, fence construction, weed control, water development, and fish and wildlife habitat enhancement as the ..... Secretary may direct after consultation with user representatives.

The amount of \$4,500,000 is based on the best available estimate of grazing receipts from National Forests in the eleven contiguous States in fiscal year 1977.

In addition to the above, this new account incorporates funds provided in past years under the account Cooperative Range Improvements.

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1/ Man-years included in appropriation Forest Protection and Utilization, Forest land management.



Section 12 of the Act of April 25, 1950, (Granger-Thye Act) provides that of the money received from grazing fees by the Treasury from each National Forest during each fiscal year there shall be available at the end thereof, when appropriated by Congress, an amount equivalent to 2 cents per animal month for sheep and goats and 10 cents per animal month for other kinds of livestock under permit on such National Forest during the calendar year in which the fiscal year begins. Since figures for animal months permitted are not available until after more than three months of the fiscal year for which funds are appropriated has elapsed, the 1978 appropriation request of \$700,000 represents the best current approximation of the amount which will become available in the calendar year 1977 under the animal months permitted formula. For calendar year 1975, the latest available figures, animal months permitted were 6.5 million for cattle and other, and 3.2 million for sheep and goats. This calculates to \$712,300 available under the formula.





# GEOGRAPHIC BREAKDOWN OF OBLIGATIONS

Rangeland Improvements		1978 <u>estimate</u>
Alabama .....		\$800
Arizona .....		904,000
Arkansas .....		7,100
California .....		357,000
Colorado .....		714,000
Florida .....		2,200
Georgia .....		700
Idaho .....		564,000
Illinois .....		700
Indiana .....		700
Louisiana .....		7,100
Michigan .....		100
Minnesota .....		100
Mississippi .....		7,200
Missouri .....		700
Montana .....		459,000
Nebraska .....		7,000
Nevada .....		253,000
New Mexico .....		527,000
North Carolina .....		700
Ohio .....		700
Oklahoma .....		1,400
Oregon .....		357,000
South Carolina .....		700
South Dakota .....		14,000
Texas .....		3,500
Utah .....		461,000
Vermont .....		100
Virginia .....		700
Washington .....		97,000
West Virginia .....		700
Wisconsin .....		100
Wyoming .....		450,000
Total .....		<u>5,200,000</u>

**Note:** Breakdown for fiscal years 1976 and 1977 included in appropriation Forest Protection and Utilization, National Forest protection and management.



[ COOPERATIVE RANGE] RANGELAND IMPROVEMENTS

Proposed Change in Language

Changes in language are proposed as follows. New language is underscored and deleted matter is enclosed in brackets.

For range [artificial] revegetation, rehabilitation, construction, [and] maintenance [of range], and protection of improvements, control of rodents, and eradication of poisonous and noxious plants on national [forests] forest lands in accordance with section 12 of the Act of April 24, 1950 (16 U.S.C. 580h), [to be derived from grazing fees as authorized by said section,] \$700,000, and in accordance with section 401(b)(1) of the Act of October 21, 1976, Public Law 94-579, \$4,500,000, to be derived from grazing fees as authorized by said sections, to remain available until expended.

The change proposed would merge the funds made available for rangeland improvements pursuant to section 12 of the Act of April 24, 1950 (16 U.S.C. 580h) and section 401(b)(1) of the Act of October 21, 1976 (PL 94-579).



Type size:  
17 1/2 M/22

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
RANGELAND IMPROVEMENTS

A-11-32a

Program and Financing (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-5207-0-2-302				
<u>Program by activities:</u>				
Range rehabilitation, protection and improve- ments on national forest lands (program costs, funded) 1/ .....	721	.....	700	5,000
Change in selected resources (undelivered orders) .....	.....	.....	.....	200
10.00 Total obligations .....	721	.....	700	5,200
<u>Financing:</u>				
21.00 Unobligated balance available, start of period .....	-21	.....	.....	.....
40.00 Budget authority .....	700	.....	700	5,200
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	721	.....	700	5,200
74.00 Obligated balance, end of period .....	.....	.....	.....	-500
90.00 Outlays .....	721	.....	700	4,700
1/ Includes capital outlay as follows: 1978, \$4 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



**STANDARD FORM 300-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised. Amc

Amounts Available for Appropriation (in thousands of dollars)

Identification code	1976 actual	1970 actual	1977 estimate	1978 estimate
12-5207-0-2-302				
Unappropriated balance, start of period .....	.....	.....	.....	.....
Collections (offsetting receipts)	700	.....	700	5,200
Total available for appropriation .....	700	.....	700	5,200
Appropriation .....	700	.....	700	5,200
Unappropriated balance, end of period .....	.....	.....	.....	.....
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 9)





Type also,  
1-76 Md/22

**STANDARD FORM 304-T**  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised,  
304-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
RANGELAND IMPROVEMENTS

A-11-34a

**OBJECT CLASSIFICATION (in thousands of dollars)**

Identification code 12-5207-0-2-302	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
<b>Personnel compensation:</b>				
11.1 Permanent positions.....	.....	.....	.....	1,125
11.3 Positions other than permanent.....	.....	.....	.....	280
11.5 Other personnel compensation.....	.....	.....	.....	25
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	.....	.....	.....	1,430
<b>Personnel benefits:</b>				
12.1 Civilian.....	.....	.....	.....	162
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	.....	.....	.....	30
22.0 Transportation of things .. Rent, communications, and utilities:	.....	.....	.....	560
23.2 Other rent, communications, and utilities .....	.....	.....	.....	100
24.0 Printing and reproduction.....	.....	.....	.....	40
25.0 Other services.....	721	.....	700	1,803
26.0 Supplies and materials.....	.....	.....	.....	875
31.0 Equipment.....	.....	.....	.....	150
32.0 Lands and structures.....	.....	.....	.....	50
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
<del>42.0 Insurance claims and indemnities.....</del>				
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
99.0 Total obligations.....	721	.....	700	5,200
(Mono cast: 22.18)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type des:  
170MA/22

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
RANGELAND IMPROVEMENTS  
Personnel Summary

A-11-34a

Identification code 12-5207-0-2-302	1976 actual 1/	1977 actual	1977 estimate 1/	1978 estimate
Total number of permanent positions .....	0		0	67
Full-time equivalent of other positions .....	0		0	31
Average paid employment .....	0		0	98
Average GS grade .....	.....		.....	8.74
Average GS salary .....	.....		.....	\$16,905
Average salary of ungraded positions .....	.....		.....	\$12,199
1/ Included in appropriation Forest protection and utilization, Forest land management.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)







CONSTRUCTION AND LAND ACQUISITION

Appropriation, 1976 .....	\$18,523,000
Appropriation, transition quarter .....	(11,269,000)
Estimate, 1977 .....	<u>1/ 18,300,000</u>
Estimate, 1978 .....	<u>22,564,000</u>
Change .....	<u>+4,264,000</u>

1/ Excludes proposed supplemental of \$234,000.

SUMMARY OF INCREASES AND DECREASES  
(dollars in thousands)

	Increase or Decrease (-)				Total
	Pay Costs	Program	Permanent full-time man-years	Total 1978 estimate	Permanent full-time man-years
<u>Construction for fire, administration, and other purposes--The amount of \$6,102,000 is proposed to construct projects necessary to support forest land management activities. .</u>	\$31	\$3,383	13	\$6,102	26
<u>Pollution abatement-- Increase will provide for the construction of facili- ties being designed in fiscal year 1977 and enable compliance with Public Law 92-500.</u>	47	1,826	18	8,084	163
<u>Research construction-- Decrease is due to non- recurring construction projects. The \$300,000 proposed will be used for minor projects at labora- tories in California and Wisconsin. ....</u>	- -	-513	- -	300	1
<u>Recreation use areas-- Decrease is due to non- recurring construction projects. ....</u>	-8	-621	-3	6,208	53
<u>Land Acquisition, Weeks Act--The amount of \$1,480,000 will provide for the acquisition of 7,610 acres of key watershed and timber- producing lands. ....</u>	-2	-269	- -	1,480	9
<u>Land planning, Alpine Lakes Area--The amount would be used to comply with the Alpine Lakes Area Management Act of 1976 (PL 94-357). (Sup- plemental of \$234,000 is being proposed in 1977.) Total .....</u>	- - 68	390 4,196	5 33	390 22,564	5 257





PROJECT STATEMENT  
(On basis of adjusted appropriation)

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
(1) Forest land management construction:					
(a) Recreation use areas	\$3,127,000	\$1,056,000	\$6,837,000	\$6,208,000	-\$629,000
(b) Construction for fire, administration, and other purposes .....	2,477,000	1,535,000	2,688,000	6,102,000	+3,414,000
(2) Research construction	1,881,000	- -	813,000	300,000	-513,000
(3) Pollution abatement ..	9,507,000	8,173,000	6,211,000	8,084,000	+1,873,000
(4) Land Acquisition, Weeks Act .....	1,531,000	505,000	1,751,000	1,480,000	-271,000
(5) Land planning, Alpine Lakes Area .....	- -	- -	1/	390,000	+390,000
Appropriation or estimate	18,523,000	11,269,000	18,300,000	22,564,000	+4,264,000

PROJECT STATEMENT  
(On obligations basis)

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
(1) Forest land management construction:					
(a) Recreation use areas .....	\$5,025,691	\$1,022,504	\$8,973,855	\$6,208,000	-\$2,765,855
(b) Construction for fire, administration, and other purposes .....	2,113,448	636,653	4,124,347	6,102,000	+1,977,653
(2) Research construction	2,944,915	1,559,751	1,792,090	300,000	-1,492,090
(3) Pollution abatement ..	12,192,469	4,731,949	16,888,138	8,084,000	-8,804,138
(4) Land Acquisition, Weeks Act .....	2,137,254	168,982	2,095,257	1,480,000	-615,257
(5) Land planning, Alpine Lakes Area .....	- -	- -	1/	390,000	+390,000
Total obligations or estimate .....	24,413,777	8,119,839	33,873,687	22,564,000	-11,309,687
Unobligated balance brought forward ...	-18,315,303	-12,424,526	-15,573,687	- -	+15,573,687
Unobligated balance carried forward ...	12,424,526	15,573,687	- -	- -	- -
Appropriation or estimate	18,523,000	11,269,000	18,300,000	22,564,000	+4,264,000

1/ Excludes proposed supplemental of \$234,000.



CONSTRUCTION AND LAND ACQUISITION  
(All capital investment)

The program provides for the construction and improvement of buildings, utilities, other physical facilities and land acquisition throughout the National Forests and National Grasslands. The financing for some development projects, including relatively minor construction projects estimated to cost less than \$25,000, is provided by the operating and research programs of which such construction items are an integral part.

- (1a) Recreation use areas (\$6,208,000, a decrease of \$621,000, in program level, decrease of \$8,000 in pay costs, and decrease of 3 permanent full-time man-years.) The proposed projects are included in Exhibit I.

The proposed program will accommodate an annual increase of 230,000 visitor-days at new publicly developed sites. It will also allow vital improvements so that about 4 million visitor-days of use can be continued and upgraded. Areas affected are:

- Reservoirs, near population centers and other locations where recreation use or demand is high but facilities are lacking,
- Deteriorating sites where new facilities will increase the carrying capacity,
- Worn-out facilities and sites which need to be redesigned and reconstructed, and
- Sites where construction of needed facilities are incomplete.

- (1b) Construction for fire, administration, and other purposes (\$6,102,000, an increase of \$3,383,000 in program, an increase of \$31,000 for pay costs, and an increase of 13 permanent full-time man-years.)

GOAL: To support the Forest Service land management programs by providing structural improvements and communications necessary to achieve the program objectives.

Water and sanitation and electrical systems--Projects, totaling \$2,323,000 to design, construct, improve existing, or replace worn out systems to comply with Federal and State water quality standards, and to provide safe, dependable facilities at the following locations:

<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
Arizona	Kaibab	Tusayan Administrative Site water and sewer system construction .....	\$275
California	Eldorado	Lumberyard Ranger Station utility system .....	82
California	Lassen	Hat Creek water and sanitation reconstruction .....	245
California	Plumas	Challenge Work Center sewage system reconstruction .....	75
California	Stanislaus	Strawberry Administrative Site water and sewer reconstruction .....	195
California	Stanislaus	Groveland Ranger District water and sewer reconstruction .....	340
California	Six Rivers	Mad River Ranger Station sewage treatment facility construction ...	240
Washington	Gifford Pinchot	Randle Ranger Station sewer system construction .....	155



<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
Washington	Mt. Baker-	North Bend Ranger Station sewer	
	Snoqualmie	construction .....	\$56
Oregon	Wallowa-	Memaloose Helitack Base utility	
	Whitman	system .....	309
Oregon and Washington	Regionwide	Regional water and sewer design ..	52
Servicewide		Other small projects (\$4,000-\$50,000)	299

Administrative sites--\$356,000 to construct one new field administrative site and to complete survey and design on priority administrative site construction projects in New Mexico and Arizona, as follows:

<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
Arizona	Prescott	Crown King Administrative Site construction--office, dwelling, and access roads, drives, and landscaping .....	\$245
New Mexico and Arizona	Regionwide	Survey and design of priority administrative site construction .	111

Offices--Offices would be constructed, improved, or designed for a total cost of \$316,000. The facilities are needed to alleviate overcrowded or unsafe working conditions. Project locations are:

<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
California	Modoc	Adin Ranger Station office addition .....	\$109
Washington	Olympic	Quinault Ranger Station office addition .....	161
Servicewide		Other small projects (\$8,000-\$19,000)	46

Housing--Facilities would be constructed, improved, or purchased for a total cost of \$810,000, to provide housing for field personnel at isolated locations, where adequate rental facilities are not available. Problem areas range from substandard, overcrowded, and unsafe structures to non-existent facilities. Project locations are:

<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
Wyoming	Bridger-Teton	Blackrock dwelling .....	\$51
Alaska	Tongass	Rowan Bay crew trailers .....	108
Oregon	Umatilla	Dale Ranger Station bunkhouse construction .....	117
Montana	Flathead	Spotted Bear Ranger Station barracks construction .....	483
Servicewide		Other small projects (\$8,000-\$34,000)	51



Service and storage buildings--Facilities would be constructed or improved at a total cost of \$365,000, to provide support facilities for National Forest operations. Specific project locations are:

<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
North Carolina	National Forests in North Carolina	Cheoah Work Center building construction .....	\$101
Wyoming	Bridger-Teton	Big Piney warehouse construction ...	57
Oregon	Malheur	John Day warehouse construction ....	110
Servicewide		Other small projects (\$18,000-\$32,000)	97

Airport and lookouts--Projects totaling \$672,000 would be constructed or improved to provide protection of the National Forests from wildfire. Aircraft, helicopters, smokejumpers, and lookouts, are involved in this protection operation. Project locations are:

<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
Tennessee	Cherokee	East Zone smokejumper base relocation .....	\$225
Oregon	Siskiyou	Cave Junction smokejumper base construction .....	377
Servicewide		Other small projects (\$26,000-\$44,000)	70

Communication systems (radios)--The National Forests rely heavily on radio communication for efficiency of operations and the protection of life and property. Many of the forest radio systems have reached the point where they cannot be economically repaired. These systems would be improved through new construction or upgrading, at a total cost of \$1,260,000, at the following locations:

<u>State</u>	<u>National Forest</u>	<u>Project</u>	<u>Amount</u> (in thousands)
Arizona	Kaibab	Radio system addition .....	\$52
Idaho	Targhee	Radio system conversion .....	135
California	Regionwide	Radio conversion .....	657
Southeastern States	Regionwide	Radio improvement (Phase I) .....	160
Northeastern States	Regionwide	Radio replacement .....	175
Idaho	Payette	Radio system addition .....	65
Servicewide		Other small projects (\$5,000-\$11,000)	16

#### Examples of Recent Accomplishments

The following units were constructed, or reconstructed, or construction contracts awarded in fiscal year 1976:

Water and sanitation systems .....	5
Offices .....	1
Dwellings .....	3
Communication systems (radio and telephones) .....	8
Airport projects .....	2
Special project .....	1





- (2) Research construction (\$300,000, a decrease of \$513,000, with no change in permanent full-time man-years.)

The proposed funds would be used to:

- (a) Remodel Forest Fire Laboratory, Riverside, California.  
Remodeling to consist of constructing a second floor within the existing fire laboratory to provide 10 new offices and to remodel first floor laboratories for fuels management research. The additional offices would permit all Forest Service fire researchers in southern California to be housed at the Riverside facility together with adequate laboratory facilities. .... \$200,000
- (b) Replace passenger elevator, Forest Products Laboratory.  
These funds would be used to replace the lobby passenger elevator serving the six floors of the main laboratory. The present equipment was installed in 1932. The electrical and manual equipment is outmoded and capacity has been cut in half so the braking system can handle the stops. .... \$100,000

- (3) Pollution abatement (\$8,084,000, an increase of \$1,826,000 in program, an increase of \$47,000 for pay costs, and an increase of 18 permanent full-time man-years.)

GOAL: To reduce water pollution from existing Forest Service facilities consistent with State water quality standards as required by PL 92-500 and E.O. 11752.

The program is to continue work required by PL 92-500 and E.O. 11752 and related State and Federal standards promulgated by that Act. Such action would include investigation of both point and non-point discharges including monitoring and surveillance systems and corrective action on identified deficient National Forest lands and facilities. Where corrective action on previously unidentified sites is found to be necessary, funds would be used for thorough analysis and preliminary design. Corrective action proposed at administrative and recreation sites is primarily to meet requirements established by EPA issued NPDES discharge permits under Sec. 402 of the Act.

The proposed funds will provide for the construction of the facilities being designed in fiscal year 1977 which, in turn, would enable the Forest Service to comply with PL 92-500. This law requires that secondary treatment on treatment works be provided by July 1, 1977.

- (4) Land acquisition, Weeks Act (\$1,480,000, a program decrease of \$269,000, a decrease in pay costs of \$2,000, and no change in permanent full-time man-years.)

Lands acquired through this program ensure quality water yields, reduce stream pollution, enhance the environment and provide for the development and management of lands for future harvests of valuable renewable resources.

This program is concentrated in the economically depressed areas of Appalachia and other Eastern States where public ownership is limited. The fiscal year 1978 funding would involve the acquisition of approximately 7,610 acres of key watershed and timber-producing lands.

Lands primarily valuable for recreation are not included in this program. The Land and Water Conservation Fund finances acquisition of recreation lands. However, acquisitions under the Weeks Act program do provide dispersed recreation opportunities and enhance or protect the esthetic values of the areas affected.



#### Examples of Recent Accomplishments

See the tabulation at the end of this section for more detailed information on the actual and planned accomplishments in fiscal years 1976-1978 (Exhibit II).

- (5) Land planning, Alpine Lakes Area (\$390,000, an increase of \$156,000 over the proposed fiscal year 1977 supplemental request of \$234,000. Five permanent full-time man-years are proposed in 1977 and 1978.)

On July 12, 1976, the Alpine Lakes Area was established under Public Law 94-357 (Alpine Lakes Area Management Act of 1976) to provide for public outdoor recreation and use, and for economic utilization of commercial forest lands, geological features, lakes, streams, and other resources in the Central Cascade Mountains of Washington State. The Area includes wilderness, an "intended" wilderness, and a management unit, comprising approximately 920,000 acres of land in mixed ownership, principally Federal. The National Forests involved are the Mt. Baker-Snoqualmie and Wenatchee.

The Act details the land acquisition and exchange program within the boundaries of the wilderness and "intended" wilderness. The Secretary of Agriculture is authorized and directed to acquire the non-Federal lands or interests within three years.

The \$390,000 would be used for multiple use planning. There is included in the Land and Water Conservation Fund, Department of the Interior, an amount of \$20 million for land acquisition.



EXHIBIT I -- RECREATION USE -- FY 1978  
CAPITAL INVESTMENTS

<u>State</u>	<u>PAOT</u>	<u>Cost</u>	<u>Projected</u>
<u>Forest and Project</u>	<u>Capacity</u>		<u>Visitor-</u> <u>Day Use</u>
<u>Alaska</u>			
National Forests (recreation cabins)	15(I)	\$45,000	2,000(I)
National Forests (dispersed recreation facilities and interpretive facilities)	500(A)	<u>130,000</u>	20,000(A)
		<u>175,000</u>	
<u>Arizona</u>			
National Forests	365(A)	<u>25,000</u>	30,000(A)
<u>Arkansas</u>			
Ouachita (Albert Pike sanitation system)	100(A)	<u>80,000</u>	15,000(A)
<u>California</u>			
National Forests (rehabilitate miscellaneous recreation facilities)	2,130(A)	276,000	811,000(A)
Tahoe (Stampede recreation area)	250(I)	775,000	20,000(I)
Lassen (Christie Campground)	400(I)	250,000	33,000(I)
Sequoia (Fir Cove Group Campground)	150(I)	140,000	23,000(I)
Sierra (Eastwood Visitor Center)	90(I)	80,000	4,000(I)
Stanislaus (Pinecrest picnic and beach)	400(I)	180,000	13,000(I)
Plumas (Lightning Tree Campground)	284(I)	90,000	14,000(I)
Angeles (Jackson Flat Campground)	175(I)	450,000	28,000(I)
Los Padres (Santa Ynez recreation area water systems)	1,205(A)	340,000	337,000(A)
Cleveland (Laguna water system)	1,915(A)	150,000	152,000(A)
Inyo (23 separate water systems)	3,490(A)	365,000	220,000(A)
Shasta-Trinity (Hellgate water system)	85(A)	60,000	4,000(A)
National Forests (small projects (\$10,000-\$50,000))	50(I)		1,700(I)
	1,690(A)	<u>115,000</u>	13,400(A)
		<u>3,271,000</u>	
<u>Colorado</u>			
National Forests (design 20 separate water systems)	1,500(A)	46,000	150,000(A)
San Isabel (Turquoise Lake recreation facilities)	340(I)	<u>160,000</u>	15,000(I)
		<u>206,000</u>	
<u>Florida</u>			
National Forests	760(A)	<u>30,000</u>	176,000(A)
<u>Georgia</u>			
Chattahoochee (Lake Conasauga, The Pocket, and Tallulah River water systems)	720(A)	<u>120,000</u>	38,000(A)
<u>Idaho</u>			
Targhee (Island Park Campground water systems)	700(A)	56,000	60,000(A)
Payette (5 separate recreation site water systems)	865(A)	57,000	50,000(A)
Sawtooth (2 separate water systems and 2 toilets)	2,000(A)	<u>105,000</u>	50,000(A)
		<u>218,000</u>	
<u>Kentucky</u>			
Daniel Boone (small project)	300(I)	<u>40,000</u>	10,000(I)



<u>State</u> <u>Forest and Project</u>	<u>PAOT</u> <u>Capacity</u>	<u>Cost</u>	<u>Projected</u> <u>Visitor-</u> <u>Day Use</u>
<u>Minnesota</u>			
Superior (small projects)	250(A)	\$40,000	20,000(A)
Superior (Crain Lake boat landing)	570(I)	180,000	15,000(I)
Chippewa (Norway Beach Campground)	230(I)	250,000	30,000(I)
		<u>470,000</u>	
<u>New Mexico</u>			
Lincoln (small project)	160(A)	<u>10,000</u>	15,000(A)
<u>Nevada</u>			
Humboldt (small project)	50(A)	28,000	6,000(A)
	15(I)	<u>- -</u>	500(I)
<u>North Carolina</u>			
National Forests (water systems at 5 separate recreation sites)	365(A)	145,000	94,000(A)
National Forests (small project)	400(A)	50,000	10,000(A)
		<u>195,000</u>	
<u>Oregon</u>			
Willamette (small project)	475(A)	32,000	37,000(A)
Siuslaw (27 separate water systems)	1,100(A)	127,000	200,000(A)
Deschutes (Little Crater and Suttle Lake water systems)	750(A)	78,000	97,000(A)
Umpqua (Diamond Lake sanitation system)	750(A)	150,000	522,000(A)
		<u>387,000</u>	
<u>Puerto Rico</u>			
Caribbean (major sign program and toilet replacements)	376(A)	<u>200,000</u>	309,000(A)
<u>South Carolina</u>			
National Forests (Elwood and Chattooga River Campgrounds)	150 (A)	78,000	34,000(A)
	320(I)	<u>- -</u>	23,000(I)
<u>Tennessee</u>			
Cherokee (small project)	285(A)	<u>20,000</u>	12,000(A)
<u>Utah</u>			
Dixie (6 separate campground water systems)	2,700(A)	<u>120,000</u>	112,000(A)
<u>Vermont</u>			
Green Mountain (Hapgood Pond Dam)	680(A)	<u>147,000</u>	18,000(A)
<u>Virginia</u>			
George Washington (small projects)	115(A)	<u>45,000</u>	24,000(A)
<u>Washington</u>			
Wenatchee (small projects)	500(A)	<u>25,000</u>	150,000(A)
<u>Wisconsin</u>			
Nicolet (Lac Vieux Desert Campground)	1,200(A)	<u>100,000</u>	8,300(A)
<u>Wyoming</u>			
National Forests (20 separate water systems)	1,745(A)	<u>218,000</u>	47,000(A)
<u>Total</u>		<u>6,208,000</u>	

PAOT -- Persons-at-one-time (A) -- Affected--no increase (I) -- Increased use





EXHIBIT II --WEEKS ACT PURCHASES 1976-1978  
(dollars in thousands)

	FY 1976			Transition Quarter			FY 1977			FY 1978		
	Options accepted	Acres	Obligation	Options to be accepted	Acres	Obligation	Options to be accepted	Acres	Obligation	Options to be accepted	Acres	Obligation
Alabama .....	1	80	\$21.9									
Arkansas .....	12	860	159.0	2	120	\$24.8	13	880	\$169.6	7	516	\$115.0
Illinois .....	2	315	63.0				14	785	103.4	8	420	100.0
Indiana .....	11	794	174.0				9	900	155.0	8	440	90.0
Kentucky .....	41	6,218	613.9				45	7,250	751.4	26	4,000	632.0
Michigan .....	15	1,392	173.9	1	115	23.0	15	1,495	142.0	10	680	80.0
Minnesota .....	5	807	60.3				9	725	50.0	8	500	40.0
Missouri .....	7	359	53.1				13	770	85.0			
Nebraska .....							1	420	55.0			
New Hampshire .....	4	590	90.0				1	50	10.0			
North Carolina .....	2	54	21.7				--	--	--	2	54	24.0
Ohio .....	19	1,337	176.9				27	1,015	155.0	20	720	100.0
Vermont .....	1	6	2.4				1	250	50.0			
Virginia .....	3	461	63.2				--	--	--			
West Virginia .....	2	264	65.3				4	240	20.0			
Wisconsin .....	5	545	81.4				12	820	65.0	3	280	40.0
Subtotal .....	130	14,082	1,820.0	3	235	47.8	164	15,600	1,811.4	92	7,610	1,221.0
Surveys and related acquisition costs ....												
Unobligated balance carried forward .....			317.3			121.4			283.9			259.0
Unobligated balance brought forward .....			8.5			344.3			-344.3			
Total appropriation .			1,531.0			505.0			1,751.0			1,480.0



## CONSTRUCTION AND LAND ACQUISITION

### Proposed Change in Language

Change in language is proposed as follows (new language is underscored):

For construction and acquisition ..... of this appropriation may be used for acquisition of land under the Act of March 1, 1911, as amended (16 U.S.C. 513-519): Provided further, That not more than \$390,000 of this appropriation may be used for planning in accordance with the Act of July 12, 1976 (16 U.S.C. 1132 note).

On July 12, 1976, the Alpine Lakes Area was established under Public Law 94-357 (Alpine Lakes Area Management Act of 1976) to provide for public outdoor recreation and use, and for economic utilization of commercial forest lands, geological features, lakes, streams, and other resources in the Central Cascade Mountains of Washington State. The Area includes wilderness, an "intended" wilderness, and a management unit, comprising approximately 920,000 acres of land in mixed ownership, principally Federal. The National Forests involved are the Mt. Baker-Snoqualmie and Wenatchee.

The Act details the land acquisition and exchange program within the boundaries of the wilderness and "intended" wilderness. The Secretary of Agriculture is authorized and directed to acquire the non-Federal lands or interests within three years. It is proposed that Land and Water Conservation Funds, U. S. Department of the Interior, be used for this acquisition.

Provisions of the legislation also require the Secretary to prepare, complete, and begin to implement a single multiple use plan for the Federal lands in the management unit within two years. The Secretary will publish notice of the plan in the Federal Register and will transmit it to the President and to Congress. The completed plan will take effect and will be implemented no earlier than 90 days and no later than 150 days from the date of such transmittal.

The Act also requires the preparation of a wilderness management plan, including a special study of the Enchantment Area of the Alpine Lakes Wilderness, taking into consideration its especially fragile nature, its ease of accessibility, its unusual attractiveness, and its resultant heavy recreation usage. No time frame is established for completion of this plan. However, it is desirable and most efficient to do this at the same time as the multiple use plan.



# CONSTRUCTION AND LAND ACQUISITION

## Proposed Change in Activity Structure

Present Structure	:	Proposed Structure
(1) Forest land management construction:	:	(1) Forest land management construction:
(a) Recreation use areas	:	(a) Recreation use areas
(b) Construction for fire, adminis-	:	(b) Construction for fire, adminis-
tration, and other purposes	:	tration, and other purposes
(2) Research construction	:	(2) Research construction
(3) Pollution abatement	:	(3) Pollution abatement
(4) Land acquisition, Weeks Act	:	(4) Land acquisition, Weeks Act
	:	(5) <u>Land planning, Alpine Lakes Area</u>
	:	<u>Management Act</u>
	:	

Activity (5) is proposed to cover funds requested for multiple use planning and wilderness management planning in the Alpine Lakes Area in Washington State (Act of July 12, 1976, 16 U.S.C. 1132 note). Funds for the purchase of the land within the Alpine Lakes Area are being requested by the Department of the Interior in the Land and Water Conservation Fund.



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
CONSTRUCTION AND LAND ACQUISITION

A-11-32a

Type doc:  
170M4/22

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Program and Financing (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-1103-0-1-302				
<u>Program by activities:</u>				
1. Forest land management construction .....	7,201	1,752	11,095	11,585
2. Research construction ...	3,048	662	2,965	1,400
3. Pollution abatement .....	13,720	3,201	17,639	6,844
4. Land acquisition, Weeks Act .....	1,777	433	1,955	1,320
5. Land planning, Alpine Lakes Area Management Act ...	.....	.....	.....	.390
Total direct program .....	25,746	6,048	33,654	21,539
Total reimbursable program	76	75	250	250
Total program costs, funded 1/ .....	25,822	6,123	33,904	21,789
Change in selected resources (undelivered orders) .....	-1,332	2,072	220	1,025
10.00 Total obligations .....	24,490	8,195	34,124	22,814
<u>Financing:</u>				
Offsetting collections from:				
11.00 Federal funds .....	-76	-75	-250	-250
21.00 Unobligated balance avail- able, start of period ..	-18,315	-12,425	-15,574	.....
24.00 Unobligated balance avail- able, end of period ....	12,425	15,574	.....	.....
Budget authority .....	18,523	11,269	18,300	22,564
40.00 Budget authority (appro- priation)	18,523	11,269	18,016	22,564
44.20 Supplemental now requested for civilian pay raises ....	.....	.....	284	.....
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	24,414	8,120	33,874	22,564
72.00 Obligated balance, start of period .....	13,577	11,364	13,311	10,500
74.00 Obligated balance, end of period .....	-11,364	-13,311	-10,500	-13,264
90.00 Outlays (excluding pay raise supplemental) ....	26,627	6,173	36,418	19,783
91.20 Outlays from civilian pay raise supplemental .	.....	.....	267	17

1/ Includes capital outlay as follows: 1976, \$14,578 thousand; Transition  
Quarter, \$9,935 thousand; 1977, \$16,000 thousand; 1978, \$11,600 thousand. 161





Type also:  
17A M4/92

STANDARD FORM 304-T  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised.  
504-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

A-11-34b

CONSTRUCTION AND LAND ACQUISITION

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1103-0-1-302				
FOREST SERVICE--Direct obligations:				
Personnel compensation:				
11.1 Permanent positions.....	5,348	1,372	4,105	4,645
11.3 Positions other than permanent.....	1,621	444	1,187	1,355
11.5 Other personnel compensation.....	140	59	55	55
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	7,109	1,875	5,347	6,055
Personnel benefits:				
12.1 Civilian.....	801	209	556	629
13.0 Benefits for former personnel.....	1	.....	.....	.....
21.0 Travel and transportation of persons.....	410	128	280	345
22.0 Transportation of things ..	282	75	195	300
Rent, communications, and utilities:				
23.1 Standard level user charges	246	30	225	302
23.2 Other rent, communications, and utilities .....	196	31	115	235
24.0 Printing and reproduction.....	23	-24	20	85
25.0 Other services.....	3,022	2,323	7,617	3,748
26.0 Supplies and materials.....	641	256	510	745
31.0 Equipment.....	1,102	156	1,030	1,185
32.0 Lands and structures.....	10,560	3,069	17,960	8,950
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
42.0 Insurance claims and indemnities.....	2	1	.....	.....
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Subtotal .....	24,395	8,129	33,855	22,579
95.0 Quarters and subsistence charges	-15	-4	-10	-15
99.0 Total <sup>direct</sup> obligations.....	24,380	8,125	33,845	22,564
(Mono cast: 22.18)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



STANDARD FORM 304-T

June 1974, Office of Management and Budget  
Circular No. A-11, Revised.  
304-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
CONSTRUCTION AND LAND ACQUISITION

A-11-34b

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1103-0-1-302				
FOREST SERVICE--Reimbursable obligations:				
Personnel compensation:				
11.1 Permanent positions.....	41	7	43	40
11.3 Positions other than permanent.....	6	2	6	9
11.5 Other personnel compensation.....	1	.....	1	1
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	48	9	50	50
Personnel benefits:				
12.1 Civilian.....	4	1	5	5
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	1	.....	1	1
22.0 Transportation of things ..	1	.....	1	1
<del>Rent, communications, and utilities:</del>				
<del>23.1 Standard level user charges</del>				
23.2 Other rent, communications, and utilities .....	2	.....	2	2
<del>24.0 Printing and reproduction.....</del>				
25.0 Other services.....	11	6	161	161
26.0 Supplies and materials.....	3	59	10	10
31.0 Equipment.....	6	.....	20	20
<del>32.0 Lands and structures.....</del>				
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
<del>42.0 Insurance claims and indemnities.....</del>				
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Total reimbursable obligations	76	75	250	250
99-0 Total obligations, Forest Service	24,456	8,200	34,095	22,814
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type also:  
17a M6/99

**STANDARD FORM 304-T**

June 1975, Office of Management and Budget,  
Circular No. A-11, Revised.  
304-101T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
CONSTRUCTION AND LAND ACQUISITION

A-11-34b

**OBJECT CLASSIFICATION (in thousands of dollars)**

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1103-0-1-302				
GENERAL SERVICES ADMINISTRATION				
<del>Personnel compensation:</del>				
<del>11.1 Permanent positions</del>				
<del>11.3 Positions other than permanent</del>				
<del>11.5 Other personnel compensation</del>				
<del>11.8 Special personal services payments</del>				
<del>Total personnel compensation</del>				
<del>Personnel benefits:</del>				
<del>12.1 Civilian</del>				
<del>13.0 Benefits for former personnel</del>				
21.0 Travel and transportation of persons	1	.....	.....	.....
<del>22.0 Transportation of things ..</del>				
<del>Rent, communications, and utilities:</del>				
<del>23.1 Standard level user charges</del>				
<del>23.2 Other rent, communications,</del>				
<del>and utilities .....</del>				
<del>24.0 Printing and reproduction</del>				
25.0 Other services	5	-5	21	.....
<del>26.0 Supplies and materials</del>				
<del>31.0 Equipment</del>				
32.0 Lands and structures	28	.....	8	.....
<del>33.0 Investments and loans</del>				
<del>41.0 Grants, subsidies, and contributions</del>				
<del>42.0 Insurance claims and indemnities</del>				
<del>43.0 Interest and dividends</del>				
<del>44.0 Refunds</del>				
Total obligations, General Services Administration ...	34	-5	29	.....
99.0 Total obligations	24,490	8,195	34,124	22,814
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



## FOREST SERVICE

## CONSTRUCTION AND LAND ACQUISITION

### Personnel Summary

Type size:  
178M6/23

**STANDARD FORM 300-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Identification code 12-1103-0-1-302	76 actual	TQ actual	77 estimate	78 estimate
<b>Direct:</b>				
Total number of permanent positions	343		240	268
Full-time equivalent of other positions .....	171		117	134
Average paid employment .....	445		439	516
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
<b>Reimbursable:</b>				
Total number of permanent positions	2		2	2
Full-time equivalent of other positions .....	0		0	0
Average paid employment .....	2		2	2
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)









# FOREST ROADS AND TRAILS

		Permanent <sup>1/</sup> full-time positions
Appropriation, 1976 .....	\$112,857,000	3,911
Appropriation, transition quarter .....	(- -)	
Estimate, 1977 .....	210,094,000	3,927
Estimate, 1978 .....	205,022,000	3,578
Change .....	-5,072,000	-349

## PROJECT STATEMENT

The following tabulation reflects the total program for the construction and maintenance of roads and trails on the National Forests and Grasslands by combining the funds available under the appropriation "Forest roads and trails" with the permanent appropriation of 10 percent of National Forest receipts.

Project	1976	Transition quarter	1977 estimate	1978 estimate	Change
1. Construction of:					
roads and trails :					
(capital invest-					
ment) .....	\$117,461,367	\$37,899,029	\$197,940,000	\$122,453,000	-\$75,487,000
2. Maintenance of :					
roads and trails :					
(operation and					
maintenance) ...	50,164,170	21,525,341	54,189,000	55,638,000	+1,449,000
Total obliga-					
tions .....	167,625,537	59,424,370	252,129,000	178,091,000	-74,038,000
Transfer from					
Roads and Trails					
for States .....	-35,908,943	-49,809,598	-13,578,435	-51,850,000	-38,271,565
Program:					
Federal-Aid High-					
way Act .....	131,716,594	9,614,772	236,560,565	- -	-236,560,565
Other Acts .....	- -	- -	1,990,000	126,241,000	+124,251,000
Cash:					
Liquidation of					
unfunded con-					
tract authority :	112,857,000	- -	208,104,000	78,781,000	-129,323,000
Budget authority :	- -	- -	1,990,000	126,241,000	+124,251,000
Appropriation or					
estimate .....	112,857,000	- -	210,094,000	205,022,000	-5,072,000

A total of \$205,022,000 cash is proposed as follows:

- (1) \$78,781,000 for the liquidation of contract authority. These funds would be used to liquidate obligations incurred for the construction and maintenance of forest roads and trails pursuant to the authority contained in the Federal-Aid Highway Act of 1973.

In Senate Report 94-991 (H.R. 14231), the Committee on Appropriations directed:

-----  
1/ Excludes following man-years in the Department of Transportation that receives funds from the Forest Service: 1976, 2; 1977, 2; 1978, 2.



In order to avoid the recurring necessity for Congressional action on annual deferrals or rescissions of road construction contract authority available under past Federal-Aid Highway Acts, the Committee has included language in the contract liquidation appropriation accounts of the Bureau of Land Management, National Park Service and Forest Service rescinding remaining unused obligating authority under the Federal-Aid Highway Act of 1973 . . . Under the Budget Reform Act, future authorizations will be subject to annual appropriations. Rescission of outstanding contract authority will permit straight budget authority appropriations, as with other construction activities of these agencies, and simplify appropriations procedures. All of the above agencies have the basic authority for road construction, and any future needs in the current year, should they arise, can be accommodated through a direct appropriation.

- (2) \$126,241,000 for obligations to be incurred in fiscal year 1978 pursuant to the National Forest Roads and Trails Systems Act of 1964 (16 USC 532-538), Organic Administration Act (16 USC 551), and the Multiple Use-Sustained Yield Act (16 USC 528-531).

A decrease of 349 Forest Service permanent full-time man-years is proposed.

The annual appropriation language and this budget presentation combine the appropriation for Forest roads and trails made pursuant to 16 USC 528-538, 551 and 23 USC 205 and the appropriation of 10 percent of forest receipts for construction and maintenance of roads and trails pursuant to 16 USC 501. This merger of funds is made in order to simplify the programing, allotment, and accounting of funds at the field level.

Status of Unfunded Authorizations  
(Federal-Aid Highway Act of 1973)

Unfunded contract authority beginning of 1977 .....	\$326,712,943
Rescission, 1977 .....	-39,827,943
Appropriation, 1977 .....	-208,104,000
Total cash required for obligations incurred under the Federal-Aid Highway Act of 1973 for which cash was not previously provided ...	<u>78,781,000</u>

FOREST ROAD PROGRAM

GOAL: To provide a transportation system within the National Forests that meets the needs of managers and users of National Forest resources.

To meet this goal the Forest Service developed a transportation system consisting of the following types of roads:

Forest arterial roads provide service to large land areas and usually connect with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. They are usually developed and operated for long-term land and resource management purposes and constant service.

Forest collector roads serve smaller land areas and are usually connected to a forest arterial or public highway. They collect traffic from forest local roads or terminal facilities. The location and standard are influenced by long-term multi-resource needs as well as travel efficiency. Forest collector roads may be operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility.



Forest local roads connect terminal facilities with forest collector or forest arterial roads, or public highways. The location and standard are usually determined by that required to serve a specific resource activity rather than travel efficiency. Forest local roads may be developed and operated for either long- or short-term service.

The recommended road program by method of financing is:

	<u>Miles</u>	<u>Dollars</u> (in thousands)
Forest Service .....	168	\$21,385
Purchaser .....	11,104	212,115

The fiscal year 1978 Transportation System Development Program is funded by two methods--direct appropriation of funds and authorization of construction through a timber sale contract. The fiscal year 1978 proposal emphasizes the timber resource demand and regulated Transportation System needs. Access would be developed through timber sale purchaser construction authorization and appropriated fund support activities in preparation for fiscal year 1978 and future sale and harvest activities.

The program proposed provides for:

- (1) Maintenance and operation of the existing roads and trails consistent with National Forest administration, use, and protection required by all ongoing programs and activities.
- (2) Capital investments
  - (a) Miles of new surveys and ongoing design activities for roads for harvesting and moving commercial timber included in new timber sales for 1978, 1979, and the future.
  - (b) Construction engineering and augmentation of roads and bridges committed to construction by past timber sales and public work contracts.
  - (c) New road and bridge construction for direct support recreation developments proposed in fiscal year 1978 budget and/or included in prior year budgets.
  - (d) Continue repair and replacement of bridges which fall below current requirements of safety for highway loadings as identified by inspections under the National Bridge Safety program.
  - (e) Road construction and reconstruction to provide access to, and in advance of implementation of, intensive renewable resource management activities with emphasis on timber.
  - (f) Road construction and reconstruction through timber sale contract requirements and timber credit allowances as provided for by PL 88-637, October 13, 1964.

#### FOREST TRAIL PROGRAM

GOAL: To complete the portions of the Appalachian National Scenic Trail which lie on the National Forests; to move significantly forward on construction and reconstruction of the Pacific Crest National Scenic Trail; and to provide users, especially those near population centers, viable and low cost recreation opportunities through a well designed and maintained trail system.





#### PROGRAM DESCRIPTION

National Forest trails are vital to dispersed recreation. Hiking is healthful, energy efficient, and can be engaged in with minimal investment by the users. Trails are the avenues hikers, bikers, and horseback riders use to access the undeveloped parts of the forests to gain vistas or points of interest. They offer escape from the pressures of workaday demands. They are also management tools to encourage best use of the resource. This budget provides for 193 miles of new or reconstructed trails, and maintenance of over 81,000 miles of existing trails and facilities.



Following is a summary of three years of road and trail construction and maintenance. A comparison is shown of the work to be undertaken (dollars in thousands).

	FY 1976		Transition Quarter		FY 1977		FY 1978		Change	
	Miles	Amount	Miles	Amount	Miles	Amount	Miles	Amount	Miles	Amount
Recurrent road maintenance ...	96,630	\$43,612	96,630	\$18,468	193,000	\$45,810	205,897	\$48,862	+12,897	+\$3,052
Recurrent trail maintenance ..	61,400	6,552	30,700	3,057	81,100	8,379	81,460	6,776	+360	-1,603
Road construction .....	363	18,406	47	5,257	744	59,951	168	21,385 1/	-576	-38,566
Trail construction .....	270	3,497	90	1,463	430	6,547	193	4,697	-237	-1,850
Location, surveys, plans and supervision (timber roads) ..	10,938	78,452	11,000	27,249	11,696	96,753	11,051	90,911	-645	-5,842
Augmentation timber purchaser construction .....	430	10,044	80	2,180	2,696	21,853	542	2,958	-2,154	-18,895
	No.		No.		No.		No.		No.	
Bridge construction and reconstruction for timber access .....	123	7,063	29	1,750	124	12,836	22	2,502	-102	-10,334
Totals .....		167,626		59,424		252,129		178,091		-74,038

1/ Includes cost of constructing 20 bridges. Therefore, increase in cost over fiscal year 1977 does not reflect a true change.



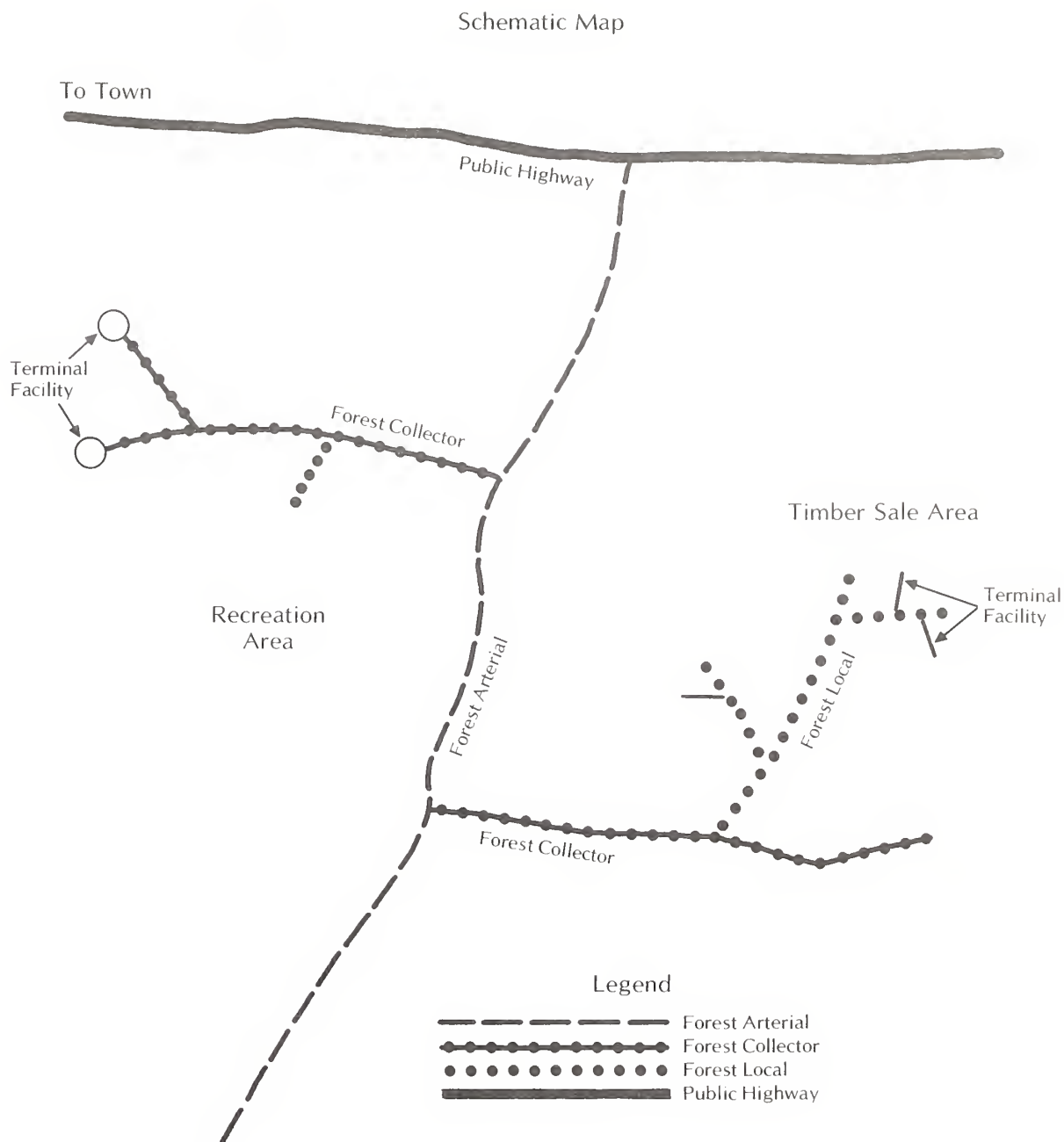
## GEOGRAPHIC BREAKDOWN OF OBLIGATIONS -- in thousands

## Forest Roads and Trails

	<u>FY 1976</u>	<u>Transition quarter</u>	<u>FY 1977 estimate</u>	<u>FY 1978 estimate</u>	<u>Decrease</u>
Alabama .....	\$794	\$265	\$1,278	\$899	\$379
Alaska .....	5,594	3,030	11,723	8,284	3,439
Arizona .....	3,546	1,765	6,713	4,729	1,984
Arkansas .....	2,709	887	3,803	2,669	1,134
California .....	34,989	12,532	46,377	32,767	13,610
Colorado .....	6,509	1,863	5,420	3,869	1,551
District of Columbia .	3,509	688	6,773	4,865	1,908
Florida .....	761	193	1,152	801	351
Georgia .....	1,043	469	2,139	1,495	644
Idaho .....	17,444	6,442	28,986	20,429	8,557
Illinois .....	478	174	725	512	213
Indiana .....	68	81	659	466	193
Kentucky .....	2,363	360	1,219	852	367
Louisiana .....	810	221	1,591	1,120	471
Maine .....	43	15	65	43	22
Michigan .....	1,708	1,294	1,936	1,355	581
Minnesota .....	2,098	1,068	2,413	1,697	716
Mississippi .....	1,013	195	1,669	1,175	494
Missouri .....	523	598	686	485	201
Montana .....	15,782	5,775	15,012	10,637	4,375
Nebraska .....	95	18	53	52	1
Nevada .....	915	233	759	541	218
New Hampshire .....	713	302	1,001	732	269
New Mexico .....	3,377	913	4,839	3,422	1,417
New York .....	2	13	27	25	2
North Carolina .....	1,337	480	2,352	1,648	704
North Dakota .....	16	23	10	10	- -
Ohio .....	68	81	247	180	67
Oklahoma .....	168	108	488	333	155
Oregon .....	27,649	7,955	55,571	39,190	16,381
Pennsylvania .....	895	524	895	636	259
Puerto Rico .....	31	-20	29	23	6
South Carolina .....	921	278	1,729	1,202	527
South Dakota .....	1,232	382	1,337	941	396
Tennessee .....	820	305	1,382	964	418
Texas .....	991	546	1,598	1,120	478
Utah .....	3,331	1,213	6,327	4,458	1,869
Vermont .....	469	237	928	689	239
Virginia .....	1,125	453	2,556	1,802	754
Washington .....	15,001	4,353	24,045	17,009	7,036
West Virginia .....	1,390	883	1,276	908	368
Wisconsin .....	1,677	886	1,186	827	359
Wyoming .....	3,619	1,343	3,155	2,230	925
Total .....	167,626	59,424	252,129	178,091	74,038



# National Forest Road Classification System







## Forest Arterial System

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Function -	Fast Through - Traffic-Mobility
Traffic Volume -	100 or More Vehicles Per Day
Usually -	{ Two Lane Hard Surface High Speed
Cost Per Mile -	\$50,000 to \$300,000
Construction -	Generally by Public Works Contract



## Forest Collector System

---



- Function - Usually Connects Local and Arterial Systems  
Balance Between Mobility and Land Access
- Traffic Volume - 50 to 200 Vehicles Per Day
- Usually - { One Lane  
Hard or Gravel Surface with Dust Palliative  
Medium Speed
- Cost Per Mile - \$20,000 to \$90,000
- Either - Public Works Contract
- Or - Timber Purchaser Construction





## Forest Local System

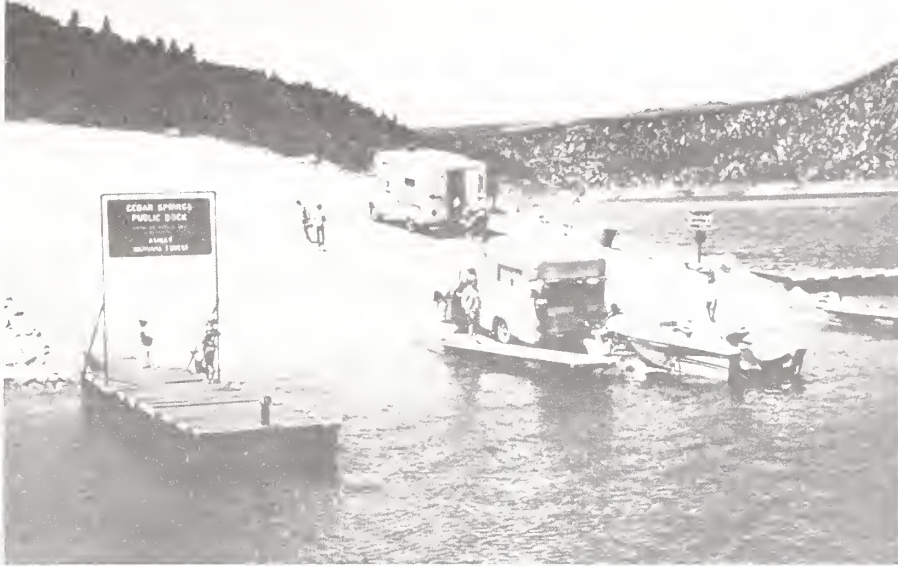
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Function -	Access to Land Units
Traffic Volume -	5 to 100 Vehicles Per Day
Usually -	{ One Lane Earth or Gravel Surface with Dust Palliative Slow Speed
Cost Per Mile -	\$10,000 to \$50,000
Sale Areas -	Constructed by Purchasers
Recreation or Administrative Areas -	Public Works or Force Account



Not on Road System  
Government Financed



Boat Ramp



Recreation Parking





Not on Road System  
Timber Financed



Log Transfer Site  
and Short Access



Helicopter Transfer Site



Proposed Change in Language

Change in language is proposed as follows. New language is underscored and deleted matter is enclosed in brackets.

- 2 For expenses necessary for carrying out the provisions of title [23]16, United  
3 States Code, sections [203 and 205] 528-538 and 551, relating to the con-  
struction and maintenance of forest development roads and trails, [\$208,104,000]  
4 \$126,241,000, to remain available until expended, and \$78,781,000 for liquid-  
ation of obligations incurred pursuant to authority contained in title 23,  
4 United States Code, section 203, to remain available until expended: Provided,  
That .....

Changes 1 - 3 eliminate words which refer to the Federal-Aid Highway Act and include basic authority--

National Forest Roads and Trails Systems Act (16 USC 532-538)  
Organic Administration Act (16 USC 551)  
Multiple Use-Sustained Yield Act (16 USC 528-531)

Change 4 provides that funds appropriated to cover unfunded contract authority remain available until expended. These funds will be used to pay obligations that were incurred under the Federal-Aid Highway Act of 1973.

In Senate Report 94-991 (H.R. 14231), the Committee on Appropriations directed:

In order to avoid the recurring necessity for Congressional action on annual deferrals or rescissions of road construction contract authority available under past Federal-Aid Highway Acts, the Committee has included language in the contract liquidation appropriation accounts of the Bureau of Land Management, National Park Service and Forest Service rescinding remaining unused obligating authority under the Federal-Aid Highway Act of 1973 . . . Under the Budget Reform Act, future authorizations will be subject to annual appropriations. Rescission of outstanding contract authority will permit straight budget authority appropriations, as with other construction activities of these agencies, and simplify appropriations procedures. All of the above agencies have the basic authority for road construction, and any future needs in the current year, should they arise, can be accommodated through a direct appropriation.



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST ROADS AND TRAILS

A-11-32a

Type doc:  
170M4/22

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Program and Financing (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-2262-0-1-302				
<u>Program by activities:</u>				
Direct program				
1. Construction of roads and trails .....	109,983	35,710	162,129	136,591
2. Maintenance of roads and trails .....	59,824	21,283	54,000	53,700
Total direct program ...	169,807	56,993	216,129	190,291
Reimbursable program				
1. Construction of roads and trails .....	254	76	300	300
2. Maintenance of roads and trails .....	446	81	700	700
Total reimbursable program	700	157	1,000	1,000
Total program costs, funded 1/ .....	170,508	57,150	217,129	191,291
Change in selected resources (undelivered orders) .....	-2,182	2,431	36,000	-12,200
10.00 Total obligations .....	168,326	59,581	253,129	179,091
<u>Financing:</u>				
Offsetting collections from:				
11.00 Federal funds .....	-36,507	-49,867	-14,328	-52,600
14.00 Non-Federal sources ....	-103	-100	-250	-250
21.49 Unobligated balance available, start of period: Contract authority .....	-417,720	-286,004	-276,389	.....
24.49 Unobligated balance avail- able, end of period: Contract authority ....	286,004	276,389	.....	.....
Budget authority .....	.....	.....	-37,838	126,241
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

A-11-32a

FOREST ROADS AND TRAILS

STANDARD FORM 300-T Program and Financing (in thousands of dollars)-continued  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Type size:  
175M/92

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-2262-0-1-302				
<u>Budget authority:</u>				
Current:				
40.00 Appropriation .....	112,857	.....	208,104	205,022
40.49 Portion applied to liquidate contract authority .....	-112,857	.....	-208,104	-78,781
43.00 Appropriation (adjusted)	.....	.....	.....	126,241
44.20 <u>Supplemental now requested</u> <u>for civilian pay raises</u>	.....	.....	1,990	.....
49.11 Contract authority re- scinded (PL 94-373) ..	.....	.....	-39,828	.....
Relation of obligations to outlays:				
71.00 Obligations incurred, net	131,716	9,614	238,551	126,241
Obligated balance, start of period:				
72.40 Appropriation .....	25,591	1,938	1,471	.....
72.49 Contract authority .....	21,850	40,709	50,324	78,781
Obligated balance, end of period:				
74.40 Appropriation .....	-1,938	-1,471	.....	-43,522
74.49 Contract authority .....	-40,709	-50,324	-78,781	.....
90.00 Outlays excluding pay raise supplemental ....	136,510	467	209,575	161,500
91.20 Outlays from civilian pay raise supplemental ....	.....	.....	1,990	.....
1/ Includes capital outlay as follows: 1976, \$79,981 thousand; Transition Quarter, \$45,619 thousand; 1977, \$100,000 thousand; 1978, \$83,000 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





A-11-32d

**STANDARD FORM 300-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Status of Unfunded Contract Authority (in thousands of dollars)

[illegible]



Type size:  
17x 14/22

**STANDARD FORM 304-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised,  
304-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST ROADS AND TRAILS

A-11-34b

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-2262-0-1-302				
FOREST SERVICE--Direct obligations:				
Personnel compensation:				
11.1 Permanent positions.....	62,074	16,580	79,072	73,175
11.3 Positions other than permanent.....	27,554	9,973	34,845	32,130
11.5 Other personnel compensation.....	1,766	1,080	2,700	2,000
11.8 Special personal services payments.....	6	6	10	10
Total personnel compensation.....	91,400	27,639	116,627	107,315
Personnel benefits:				
12.1 Civilian.....	10,277	3,006	13,175	12,125
13.0 Benefits for former personnel.....	9	1	.....	.....
21.0 Travel and transportation of persons.....	4,447	1,650	6,424	5,424
22.0 Transportation of things ..	7,892	4,208	14,370	8,200
Rent, communications, and utilities:				
23.1 Standard level user charges.....	3,088	649	3,915	4,406
23.2 Other rent, communications, and utilities .....	2,046	964	3,725	2,385
24.0 Printing and reproduction.....	425	120	770	500
25.0 Other services.....	24,609	9,289	45,098	9,396
26.0 Supplies and materials.....	6,222	4,787	11,300	6,250
31.0 Equipment.....	2,503	2,044	4,500	2,900
32.0 Lands and structures.....	14,777	5,043	26,900	14,240
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
42.0 Insurance claims and indemnities.....	150	23	150	150
<del>43.0 Interest and dividends.....</del>				
44.0 Refunds.....				
Subtotal, direct obligations	167,845	59,423	246,954	173,291
95.0 Quarters and subsistence charges .....	-291	-86	-300	-200
direct				
<del>99.0</del> Total obligations.....	167,554	59,337	246,654	173,091
(Mono cast: 22.12)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type also:  
in MA/99

STANDARD FORM 304-T  
June 1978, Office of Management and Budget  
Circular No. A-11, Revised.  
304-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

A-11-34b

FOREST ROADS AND TRAILS

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-2262-0-1-302				
FOREST SERVICE--Reimbursable				
Personnel compensation: obligations:				
11.1 Permanent positions.....	165	44	242	240
11.3 Positions other than permanent.....	74	23	98	105
11.5 Other personnel compensation.....	7	7	10	10
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	246	74	350	355
Personnel benefits:				
12.1 Civilian.....	26	6	35	35
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	15	9	34	35
22.0 Transportation of things ..	9	11	11	10
<del>—Rent, communications, and utilities:</del>				
<del>23.1 Standard level user charges</del>				
23.2 Other rent, communications, and utilities .....	31	11	17	17
<del>24.0 Printing and reproduction.....</del>				
25.0 Other services.....	123	33	159	154
26.0 Supplies and materials.....	32	17	56	56
31.0 Equipment.....	10	6	13	13
32.0 Lands and structures.....	209	-10	326	326
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
<del>42.0 Insurance claims and indemnities.....</del>				
<del>43.0 Interest and dividends.....</del>				
Subtotal, reimbursable				
<del>44.0 Refunds, obligations.....</del>	701	157	1,001	1,001
95.0 Quarters and subsistence charges.....	-1	.....	-1	-1
reimbursable				
<del>99.0 Total obligations.....</del>	700	157	1,000	1,000
Total obligations, Forest Service	168,254	59,494	247,654	174,091
(Mono cast: 22.1B)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type size:  
12n M6/22

**STANDARD FORM 304-T**  
June 1978, Office of Management and Budget  
Circular No. A-11, Revised.  
304-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST ROADS AND TRAILS

A-11-34b

**OBJECT CLASSIFICATION (in thousands of dollars)**

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-2262-0-1-302				
ALLOCATION TO DEPARTMENT OF Personnel compensation: TRANSPORTATION				
11.1 Permanent positions.....	39	5	106	111
<del>11.3 Positions other than permanent.....</del>				
<del>11.5 Other personnel compensation.....</del>				
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	39	5	106	111
Personnel benefits:				
12.1 Civilian.....	3	1	4	4
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	3	1	4	4
22.0 Transportation of things ..	3	1	4	4
Rent, communications, and utilities:				
<del>23.1 Standard level user charges</del>				
<del>23.2 Other rent, communications,</del>				
<del>and utilities .....</del>				
24.0 Printing and reproduction.....	1	.....	2	2
25.0 Other services.....	23	6	25	26
<del>26.0 Supplies and materials.....</del>				
<del>31.0 Equipment.....</del>				
32.0 Lands and structures.....	.....	73	5,330	4,849
Total obligations, Department of Transportation	72	87	5,475	5,000
99.0 Total obligations.....	168,326	59,581	253,129	179,091
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





A-11-34b

**STANDARD FORM 300-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## Personnel Summary

Identification code	76 actual	TQ actual	77 estimate	78 estimate
12-2262-0-1-302				
FOREST SERVICE				
<u>Direct:</u>				
Total number of permanent positions	4,606		4,586	4,237
Full-time equivalent of other positions .....	2,970		3,492	3,213
Average paid employment .....	7,007		8,870	7,175
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
<u>Reimbursable:</u>				
Total number of permanent positions	10		14	14
Full-time equivalent of other positions .....	7		10	10
Average paid employment .....	20		25	25
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
DEPARTMENT OF TRANSPORTATION				
Total number of permanent positions	2		5	5
Full-time equivalent of other positions .....	0		0	0
Average paid employment .....	2		2	2
Average GS grade .....	8.43		8.43	8.43
Average GS salary .....	\$15,437		\$16,978	\$16,919
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



FOREST ROADS  
(All capital investment)

Appropriation, 1976 .....	(- -)
Appropriation, transition quarter .....	(- -)
Appropriation, 1977 .....	\$173,000,000
Estimate, 1978 .....	212,115,000
Change .....	+39,115,000

PROJECT STATEMENT

Project	:	:Transition:	1977	:	1978	:	Change
	:	quarter	estimate	:	estimate	:	
Construction of roads by	:	:	:	:	:	:	
timber purchasers .....	:	-	-	:	\$173,000,000	:	\$212,115,000
Unobligated balance	:	:	:	:	:	:	+\$39,115,000
brought forward .....	:	-	-	:	-	-	-
Unobligated balance	:	:	:	:	:	:	-
carried forward .....	:	-	-	:	-	-	-
Appropriation or estimate	:	-	-	:	173,000,000	:	212,115,000
	:	-	-	:	173,000,000	:	+39,115,000

An increase of \$39,115,000 is proposed.

It is estimated that the cost of roads to be constructed by timber purchasers in timber sale contracts awarded in fiscal year 1978 will be \$212,115,000.

Provision is made for budget authority to carry out item (2) of 16 USC 535. This is in accordance with section 9 of PL 93-378 (August 17, 1974) and definitions in section 3(a) of PL 93-344 (July 12, 1974). The above provisions relate to forest development road construction and reconstruction as negotiated in timber sale contracts. These roads are those required within a timber sale area specifically for the removal of the timber, but which would remain on the National Forest development road system for resource management purposes after the timber sale contract is completed.

Construction or reconstruction would be completed on 10,199 miles of road. This is an increase over the mileage shown for fiscal year 1978 in the Resources Planning Act Program proposals. This upward revision was caused by an improvement in the timber market which considerably increased the need for roads in the immediate future. While aware of Congress's desire that a greater proportion of the Forest Service road system be built using appropriated funds, it was decided that the increased market demands combined with the higher cost of Government construction warrant the increase in timber purchaser construction.

Purchaser construction and reconstruction (miles):

Fiscal year 1976 .....	8,521 1/
Transition quarter .....	4,500 1/
Fiscal year 1977, estimate .....	9,597
Fiscal year 1978, estimate .....	10,199

-----  
1/ Final accomplishment yet to be verified.



FOREST ROADS

Proposed Change in Language

Change in language is proposed as follows (deleted language is enclosed in brackets):

For the construction of roads by timber purchasers pursuant to clause (2) of section 4 of the Act of October 13, 1964 (78 Stat. 1089), [and in advance of a determination of payments due pursuant to the Act of March 4, 1907 (16 U.S.C. 499) and the Acts of May 23, 1908 and March 1, 1911 (16 U.S.C. 500), \$173,000,000] \$212,115,000.

Change is proposed because of the enactment of PL 94-588, October 22, 1976. Section 16 provides that beginning October 1, 1976, moneys received and subject to payments to States under the Acts of May 23, 1908, and March 1, 1911, shall include all amounts earned or allowed any purchaser of National Forest timber and other forest products as purchaser credits, for the construction of roads on the National Forest Transportation System within such National Forests or parts thereof in connection with any Forest Service timber sales contract.



## GEOGRAPHIC BREAKDOWN OF OBLIGATIONS -- in thousands

## Forest Roads

	<u>1977</u> <u>estimate</u>	<u>1978</u> <u>estimate</u>	<u>Increase</u>
Alabama .....	\$144	\$176	\$32
Alaska .....	21,223	26,020	4,797
Arizona .....	1,383	1,695	312
Arkansas .....	3,111	3,813	702
California .....	42,859	52,550	9,691
Colorado .....	1,358	1,665	307
Florida .....	127	155	28
Georgia .....	324	397	73
Idaho .....	13,709	16,810	3,101
Illinois .....	18	25	7
Kentucky .....	110	135	25
Louisiana .....	1,350	1,655	305
Maine .....	28	34	6
Michigan .....	414	508	94
Minnesota .....	488	598	110
Mississippi .....	1,650	2,023	373
Missouri .....	97	118	21
Montana .....	11,647	14,280	2,633
New Hampshire .....	519	636	117
New Mexico .....	2,063	2,530	467
North Carolina .....	498	610	112
Oregon .....	47,300	57,995	10,695
Pennsylvania .....	441	540	99
South Carolina .....	1,623	1,990	367
South Dakota .....	214	262	48
Tennessee .....	188	230	42
Texas .....	263	322	59
Utah .....	284	348	64
Vermont .....	111	136	25
Virginia .....	279	342	63
Washington .....	17,940	22,000	4,060
Wisconsin .....	353	433	80
Wyoming .....	884	1,084	200
Total .....	<u>173,000</u>	<u>212,115</u>	<u>39,115</u>





DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FOREST ROADS

A-11-32a

Type size:  
12/10/64/68

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Program and Financing (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-2263-0-1-302				
<b>Program by activities:</b>				
Timber purchaser credits, construction of roads (program costs, funded) 1/..	.....	.....	17,300	77,000
Change in selected resources (undelivered orders) .....	.....	.....	155,700	135,115
10.00 Total obligations (object class 25.0) ...	.....	.....	173,000	212,115
<b>Financing:</b>				
21.00 Unobligated balance avail- able, start of period ..	.....	.....	.....	.....
24.00 Unobligated balance avail- able, end of period ....	.....	.....	.....	.....
40.00 Budget authority ..... (appropriation)	.....	.....	173,000	212,115
<b>Relation of obligations to outlays:</b>				
71.00 Obligations incurred, net	.....	.....	173,000	212,115
72.00 Obligated balance, start of period .....	.....	.....	.....	155,700
74.00 Obligated balance, end of period .....	.....	.....	-155,700	-290,815
90.00 Outlays .....	.....	.....	17,300	77,000
1/ Includes capital outlay as follows: 1977, \$17,300 thousand; 1978, \$77,000 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



HIGHLAND SCENIC HIGHWAY  
(All capital investment)

The Federal-Aid Highway Act of 1973 (PL 93-87) contained the following provision:

Sec. 161(a) The Secretary of Agriculture (acting through the Forest Service) is authorized to develop and construct as a parkway the Highland Scenic Highway from West Virginia State Route 39 to U.S. 250 near Barton Knob.

Construction of 8.5 miles of the highway will be done by the State of West Virginia on which design, engineering, and land acquisition is complete and for signing of the scenic highway and other appropriate points with the new distinctive logo sign adopted by the Forest Service.

In accordance with the provisions of PL 93-87, the history of the available funds is as follows:

- (1) Funds were appropriated to the Department of Transportation, Federal Highway Administration, in fiscal year 1976 (PL 94-134).
- (2) Department of Transportation transferred the funds to the Department of the Interior, National Park Service.
- (3) Department of the Interior transferred \$15 million to the Forest Service in a trust account.
- (4) Since the Forest Service does not have authority to contract with the State of West Virginia, the funds will be transferred back to the Department of Transportation. The Department of Transportation will contract for the construction of the highway with the State of West Virginia.



Type dno:  
176166/23

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
HIGHLAND SCENIC HIGHWAY

A-11-32a

STANDARD FORM 300-T  
June 1973, Office of Management and Budget  
Circular No. A-11, Revised

Program and Financing (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-8029-0-7-404				
<b>Program by activities:</b>				
Construction of Highland scenic highway (program costs, funded) 1/ .....	.....	.....	2,600	8,100
Change in selected resources (undelivered orders) .....	.....	.....	12,400	-8,100
10.00 Total obligations (object class 41.0) .....	.....	.....	15,000	.....
<b>Financing:</b>				
22.00 Unobligated balance transferred from other accounts .....	.....	.....	-15,000	.....
40.00 Budget authority ...	.....	.....	.....	.....
<b>Relation of obligations to outlays:</b>				
71.00 Obligations incurred, net	.....	.....	15,000	.....
72.00 Obligated balance, start of period .....	.....	.....	.....	12,400
74.00 Obligated balance, end of period .....	.....	.....	-12,400	-4,300
90.00 Outlays .....	.....	.....	2,600	8,100
1/ Includes capital outlay as follows: 1977, \$2,600 thousand; 1978, \$8,100 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)









ACQUISITION OF LANDS FOR NATIONAL FORESTS, SPECIAL ACTS  
(All capital investment)

Appropriation, 1976 .....	\$161,000
Appropriation, transition quarter .....	(- -)
Appropriation, 1977 .....	160,000
Estimate, 1978 .....	165,000
Change .....	+5,000

An increase of \$5,000 is proposed.

PROJECT STATEMENT

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
1. Cache National Forest, Utah, Act of 5/11/38, as amended .....	\$15,352:	\$333:	\$20,000:	\$20,000:	- -
2. Uinta-Wasatch National Forests, Utah, Act of 8/26/35, as amended .....	14,821:	- - :	30,000:	30,000:	- -
3. Toiyabe National Forest, Nevada, Act of 6/25/38, as amended .....	9,735:	165:	10,000:	10,000:	- -
4. Angeles National Forest, California, Act of 6/11/40 .....	17,725:	- - :	20,000:	20,000:	- -
5. San Bernardino and Cleveland: National Forests, Cali- fornia, Act of 6/15/38 ...	81,000:	-125:	80,000:	85,000:	+5,000
Unobligated balance carried forward .....	22,367:	- - :	- - :	- - :	- -
Unobligated balance brought forward .....	- - :	-22,367:	- - :	- - :	- -
Unobligated balance reverted to National Forests Fund .....	- - :	21,994:	- - :	- - :	- -
Appropriation or estimate .....	161,000:	- - :	160,000:	165,000:	+5,000

The Congress has enacted several special laws which authorize appropriation from the receipts of specified National Forests for the purchase of lands to minimize erosion and flood damage. Amounts appropriated and laws under which authorized are shown above.

These are critical watershed lands needing soil stabilization and vegetative cover restoration to prevent serious erosion and damaging floods within these National Forests. Land treatment measures must be applied and subsequently maintained on all lands in these areas to make corrective action fully effective. To assure full program effectiveness, the intermingled private lands must be acquired by the Federal Government. The results would be reflected in improved watershed conditions, social benefits, and development of economic strength in local communities.



The counties in southern California have recognized the benefits that these acquisition programs have produced. They are very interested in having these critical watershed lands protected by being in public ownership. At the present, damages to these lands are occurring which can only result in future expenditures of public funds for rehabilitation and public safety at costs greatly exceeding current land acquisition costs.

At a level of \$165,000 an estimated 600 acres of key watershed lands would be acquired. Planned management of these lands would reduce the potential for erosion, possible damages to private property, help insure public safety, and enhance the visual environment.

No permanent full-time positions are assigned to this appropriation.



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

A-11-32a

Type size:  
170M/25

STANDARD FORM 300-T ACQUISITION OF LANDS FOR NATIONAL FORESTS, SPECIAL ACTS  
June 1975, Office of Management and Budget Circular No. A-11, Revised. Program and Financing (in thousands of dollars)

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-5208-0-2-302				
<u>Program by activities:</u>				
1. Cache National Forest, Utah	15	.....	20	20
2. Uinta and Wasatch National Forests, Utah .....	16	.....	30	30
3. Toiyabe National Forest, Nevada .....	10	.....	10	10
4. Angeles National Forest, California .....	21	.....	20	20
5. San Bernardino and Cleveland National Forests, California .....	48	57	80	85
Total program costs, funded 1/	110	57	160	165
Change in selected resources (undelivered orders) .....	29	-57	.....	.....
10.00 Total obligations (object class 32.0) .....	139	.....	160	165
<u>Financing:</u>				
21.00 Unobligated balance available, start of period ..	.....	-22	.....	.....
24.00 Unobligated balance available, end of period ....	22	.....	.....	.....
25.00 Unobligated balance lapsing	.....	22	.....	.....
40.00 Budget authority (appropriation) (special fund)	161	.....	160	165
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	139	.....	160	165
72.00 Obligated balance, start of period .....	68	72	72	50
74.00 Obligated balance, end of period .....	-72	-72	-50	-75
77.00 Adjustments in expired accounts .....	.....	-1	.....	.....
90.00 Outlays .....	135	-1	182	140
1/ Includes capital outlay as follows: 1976, \$110 thousand; Transition Quarter, \$57 thousand; 1977, \$160 thousand; 1978, \$165 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



A-11-38

STANDARD FORM 300-T ACQUISITION OF LANDS FOR NATIONAL FORESTS, SPECIAL ACTS  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised. Amounts Available for Appropriation (in thousands of dollars)

Identification code	1976 actual	1977 TQ actual	1978 estimate	1979 estimate
12-5208-0-2-302				
Collections (offsetting receipts)	161	-22	160	165
Unobligated balance returned to unappropriated receipts .....	.....	22	.....	.....
Total available for appropriation .....	161	.....	160	165
Appropriation .....	-161	.....	-160	-165
Unappropriated balance, end of period .....	.....	.....	.....	.....
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





ACQUISITION OF LANDS TO COMPLETE LAND EXCHANGES  
(All capital investment)

Appropriation, 1976 .....	\$35,000
Appropriation, transition quarter .....	(- -)
Appropriation, 1977.....	54,000
Estimate, 1978 .....	38,000
Change .....	<u>-16,000</u>

PROJECT STATEMENT

Project	: 1976	: Transition: quarter	: 1977 : estimate	: 1978 : estimate	: Change
Purchase of land, State of:	:	:	:	:	:
California .....	: \$32,800:	- -:	\$45,945:	- -:	-\$45,945
Montana .....	: - -:	- -:	750:	- -:	-750
Georgia .....	: - -:	- -:	16,250:	- -:	-16,250
Oklahoma .....	: 4,500:	- -:	- -:	- -:	- -
South Carolina .....	: 498:	- -:	1,502:	- -:	-1,502
Wisconsin .....	: - -:	\$14,811:	- -:	- -:	- -
Minnesota .....	: 11,872:	- -:	6,318:	- -:	-6,318
Virginia .....	: - -:	- -:	7,785:	- -:	-7,785
North Carolina .....	: - -:	- -:	- -:	\$37,600:	+37,600
Unobligated balance brought forward	: -54,645:	-39,975:	-25,164:	- -:	+25,164
Unobligated balance carried forward	: 39,975:	25,164:	- -:	- -:	- -
Appropriated balance not available	: - -:	- -:	614:	400:	-214
Appropriation or estimate .....	: 35,000:	- -:	54,000:	38,000:	-16,000

It is estimated that 170 acres of land will be acquired in fiscal year 1977, and 160 acres in fiscal year 1978.



## DEPARTMENT OF AGRICULTURE

## FOREST SERVICE

A-11-32a

Type size:  
178MA/22

STANDARD FORM 300-T

June 1976, Office of Management and Budget  
Circular No. A-11, Revised.

## ACQUISITION OF LANDS TO COMPLETE LAND EXCHANGES

## Program and Financing (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-5216-0-2-302				
<u>Program by activities:</u>				
Acquisition of land:				
1. California .....	33	.....	46	.....
2. Georgia .....	.....	.....	16	.....
3. Minnesota .....	12	15	.....	.....
4. Montana .....	.....	.....	1	.....
5. Oklahoma .....	.....	4	.....	.....
6. South Carolina ..	.....	.....	2	.....
7. Wisconsin .....	.....	.....	6	.....
8. Virginia .....	.....	.....	8	.....
9. North Carolina ..	.....	.....	.....	38
Total program costs, funded 1/ .....	45	19	79	38
Change in selected resources (undelivered orders) .....	5	-4	.....	.....
10.00 Total obligations (object class 32.0) .....	50	15	79	38
<u>Financing:</u>				
Unobligated balance avail- able, start of period	-55	-40	-25	.....
24.00 Unobligated balance avail- able, end of period ..	40	25	.....	.....
40.00 Budget authority (appro- priation)(special fund)	35	.....	54	38
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	50	15	79	38
72.00 Obligated balance, start of period .....	.....	11	15	.....
74.00 Obligated balance, end of period .....	-11	-15	.....	.....
90.00 Outlays .....	39	11	94	38
1/ Includes capital outlay as follows: 1976, \$45 thousand; Transition Quarter, \$19 thousand; 1977, \$79 thousand; 1978, \$38 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Type class:  
178M4/22

STANDARD FORM 300-T

June 1978, Office of Management and Budget  
Circular No. A-11, Revised. Amounts

Circular No. A-11, Revised.

## ACQUISITION OF LANDS TO COMPLETE LAND EXCHANGES

Amounts Available for Appropriation (in thousands of dollars)

Identification code 12-5216-0-2-302	1976 actual	19 TQ actual	1977 estimate	1978 estimate
Unappropriated balance, start of period .....	89	54	92	38
Collections (offsetting receipts) .....	.....	38	.....	.....
Total available for appropriation .....	89	92	92	38
Appropriation .....	-35	.....	-54	-38
Unappropriated balance, end of period .....	54	92	38	.....
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)









ASSISTANCE TO STATES FOR TREE IMPROVEMENT  
(All capital investment)

		<u>Permanent full-time man-years</u>
1976 .....	\$1,368,000	15
Transition quarter .....	(834,000)	
1977 .....	<u>1,386,000</u>	<u>15</u>
1978 .....	<u>1,387,000</u>	<u>15</u>
Change .....	<u>+\$1,000</u>	<u>- -</u>

PROJECT STATEMENT

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
Assistance to States for tree improvement .....	\$1,342,870	\$699,019	\$1,586,128	\$1,387,000	-\$199,128
Unobligated balance brought forward .....	-40,017	-65,147	-200,128	- -	+200,128
Unobligated balance carried forward .....	65,147	200,128	- -	- -	- -
Appropriation or estimate .	1,368,000	834,000	1,386,000	1,387,000	+1,000

An increase of \$1,000 is proposed to provide for the costs of the pay increase effective in October 1976 (Executive Order 11941).

No change in permanent full-time man-years is proposed.

The objective is to produce only seedlings from improved seed and thereby increase production in all the Nation's private forests. Tree improvement yields 10-15 percent volume gains from first generation seed orchard seedlings.

The program authorized under Section 401 of the Agricultural Act of 1956 (16 USC 568e) provides assistance to States in their forestation and tree improvement projects. Rehabilitation of State and county forest lands and production of improved tree seedlings has been carried out under this program.

New and expanded tree improvement projects which are funded under this program are underway in 43 States. Nationally, the States expend three times more than they receive under this program for tree improvement.

Assistance emphasizes seed orchard establishment aimed at the production of improved genetic quality tree seed. Reforestation work would be carried out to restore low-yielding or non-productive forest lands to fuller production of commercial wood. In addition, attendant benefits include:

- Erosion control.
- Wildlife habitat improvement.
- Expanded recreational land use potentials.
- Environmental enhancement.

This is a long-range program with no short-term benefits. The long-range benefits are:

- Seedlings from first-generation seed orchards show a gain of 10-15 percent in volume growth.



- Seedlings from 1-1/2 generation seed orchards (progeny tested) - 15-25 percent gain.
- Seedlings from second generation seed orchards - 35-50 percent gain.
- Assuming a future production of 930 million seedlings, this translates to an increase in mean annual increment of 16 million cubic feet (first generation seed orchards) to 53 million cubic feet (second generation seed orchards).

#### Examples of Recent Accomplishments

<u>Year</u>	<u>Seed Orchards Established</u> (acres)	<u>Improved Seed Produced</u> (lbs.)
1975	51	3,765
1976	465	3,270
1977	125 estimated	3,500 estimated

In Colorado a 60-source ponderosa pine provenance trial has been planted on one site at 8,000 feet elevation and another at 5,000 feet. Growth is rather slow at the high site but survival is good throughout the trial.

In Georgia 10 acres were added to the slash pine seed orchard at Baldwin; the slash pine seed orchard at Davisboro had the less than desirable trees removed and is now approved for Blue Tag certification of the seed. Nearly one thousand pounds of improved slash pine seed and 680 pounds of improved loblolly pine seed were produced.

In Kansas 55 acres of seed orchard are under management. The orchard contains 231 clones (group of cuttings from a single parent) of black walnut, 19 clones of hybrid walnut, and 31 clones of cottonwood. A progeny test of cottonwood was started, using 30,000 cuttings. Plans are to acquire 227 acres for expansion of the seedling and clone orchard.

In New York 177 acres of seed orchard and 218 acres of seed production areas are under management. A total of 2,500 grafts of white pine, Japanese and European larch, Scotch pine, Norway and white spruce were propagated. Nearly 1.5 million improved seedlings were distributed to the public.

In Oregon a 400 acre site for a seed orchard and administrative buildings has been acquired and a development plan has been prepared. To date 30,000 selected seedlings and grafts occupy 155 acres of the seed orchard. A massive controlled crossing program of selected parents for progeny evaluation has been started.



GEOGRAPHIC BREAKDOWN OF OBLIGATIONS

Assistance to States for Tree Improvement  
(in thousands)

	<u>1976</u>	<u>Transition quarter</u>	<u>1977 estimate</u>	<u>1978 estimate</u>
Alabama .....	\$77	\$49	\$91	\$80
Alaska .....	6	- -	- -	- -
Arizona .....	1	- -	1	1
Arkansas .....	18	5	22	18
California .....	43	12	36	43
Colorado .....	12	6	16	12
Connecticut .....	8	5	8	8
Delaware .....	5	3	6	5
Florida .....	47	45	58	50
Georgia .....	64	22	77	70
Guam .....	10	2	10	10
Hawaii .....	30	8	26	30
Idaho .....	18	14	34	20
Illinois .....	13	8	14	13
Indiana .....	20	12	20	20
Iowa .....	7	4	8	7
Kansas .....	33	28	48	35
Kentucky .....	24	12	29	24
Louisiana .....	50	16	59	50
Maine .....	5	3	6	5
Maryland .....	33	20	34	33
Massachusetts .....	1	1	1	1
Michigan .....	39	24	41	40
Minnesota .....	26	16	27	26
Mississippi .....	50	17	59	50
Missouri .....	39	24	41	40
Montana .....	17	7	31	18
Nebraska .....	14	- -	18	14
New Hampshire .....	11	6	11	11
New Jersey .....	13	8	14	13
New Mexico .....	1	- -	14	1
New York .....	13	8	13	13
North Carolina .....	67	32	78	70
Ohio .....	20	12	20	20
Oklahoma .....	19	7	23	19
Oregon .....	65	45	72	70
Pennsylvania .....	13	8	14	13
South Carolina .....	34	28	41	34
South Dakota .....	17	6	24	17
Tennessee .....	40	16	49	40
Texas .....	68	44	81	70
Vermont .....	16	10	16	16
Virginia .....	69	30	82	70
Washington .....	64	43	76	65
Wisconsin .....	16	10	16	16
Wyoming .....	21	9	29	21
Subtotal .....	1,277	685	1,494	1,302
Forest Service administration and technical assistance .....	66	14	92	85
Unobligated balance, end of period .....	65	200	- -	- -
Unobligated balance, beginning of period .....	-40	-65	-200	- -
Total .....	1,368	834	1,386	1,387



ASSISTANCE TO STATES FOR TREE [PLANTING] IMPROVEMENT

Proposed Change in Appropriation Title

Minor change is proposed to more accurately reflect the activities involved. There has been a shift in emphasis in this program.





## DEPARTMENT OF AGRICULTURE

A-11-32a

## FOREST SERVICE

## ASSISTANCE TO STATES FOR TREE IMPROVEMENT

Type des:  
170250/22

STANDARD FORM 300-7

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## Program and Financing (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1101-0-1-302				
<u>Program by activities:</u>				
Tree improvement assistance (program costs, funded) 1/ .	1,335	488	1,459	1,364
Change in selected resources (undelivered orders) .....	8	211	127	23
10.00 Total obligations .....	1,343	699	1,586	1,387
<u>Financing:</u>				
21.00 Unobligated balance avail- able, start of period .	-40	-65	-200	.....
24.00 Unobligated balance avail- able, end of period ...	65	200	.....	.....
40.00 Budget authority (appro- priation) .....	1,368	834	1,373	1,387
44.20 Supplemental now requested for civilian pay raises	.....	.....	13	.....
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	1,343	699	1,586	1,387
72.00 Obligated balance, start of period .....	527	476	895	459
74.00 Obligated balance, end of period .....	-476	-895	-459	-459
90.00 Outlays, excluding pay raise supplemental ....	1,393	280	2,010	1,386
91.20 Outlays from civilian pay raise supplemental	.....	.....	12	1
1/ Includes capital outlay as follows: 1976, \$7 thousand; Transition Quarter, \$2 thousand; 1977, \$7 thousand; 1978, \$7 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 8)

300-101T

197



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

A-11-34a

STANDARD FORM 304-T  
June 1978, Office of Management and Budget  
Circular No. A-11, Revised.  
304-1037

ASSISTANCE TO STATES FOR TREE IMPROVEMENT

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-1101-0-1-302				
Personnel compensation:				
11.1 Permanent positions.....	244	77	258	268
11.3 Positions other than permanent.....	27	9	28	26
<del>11.5 Other personnel compensation.....</del>				
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	271	86	286	294
Personnel benefits:				
12.1 Civilian.....	26	8	27	28
<del>12.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	24	9	28	25
22.0 Transportation of things .....	2	.....	.....	.....
Rent, communications, and utilities:				
23.1 Standard level user charges.....	10	5	15	16
23.2 Other rent, communications, and utilities .....	1	.....	2	1
24.0 Printing and reproduction.....	1	3	1	.....
25.0 Other services.....	56	421	204	13
26.0 Supplies and materials.....	-46	2	3	.....
31.0 Equipment.....	6	5	10	.....
<del>32.0 Lands and structures.....</del>				
<del>33.0 Investments and loans.....</del>				
41.0 Grants, subsidies, and contributions.....	992	160	1,010	1,010
<del>42.0 Insurance claims and indemnities.....</del>				
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
99.0 Total obligations.....	1,343	699	1,586	1,387

(Mono cast: 22.13)

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(Mono cast: 5.9)

(Mono cast: 5)



A-11-34a

STANDARD FORM 300-T AS  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

### Personnel Summary

300-101T









CONSTRUCTION AND OPERATION OF RECREATION FACILITIES  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
Appropriation, 1976 .....	\$2,879,601	71
Appropriation, transition quarter .....	(2,212,000)	
Estimate, 1977 .....	2,475,000	64
Estimate, 1978 .....	4,084,000	70
Change .....	<u>+1,609,000</u>	<u>+6</u>

An increase of \$1,609,000 is projected, with an increase of 6 permanent full-time man-years.

PROJECT STATEMENT

Project	:	1976	:	Transition: quarter	:	1977 estimate	:	1978 estimate	:	Change
Construction and operation of recreation facilities .....	:		:		:		:		:	
Unobligated balance brought forward .....	:	\$2,813,763	:	\$2,002,773	:	\$2,807,905	:	\$4,084,000	:	+\$1,276,095
Unobligated balance carried forward .....	:	-57,840	:	-123,678	:	-332,905	:	- -	:	+332,905
Appropriation or estimate .....	:	123,678	:	332,905	:	- -	:	- -	:	- -
	:		:		:		:		:	
Appropriation or estimate .....	:	2,879,601	:	2,212,000	:	2,475,000	:	4,084,000	:	+1,609,000 .

GOAL: Improve the operation and maintenance of National Forest System recreation facilities, particularly those near the user and those associated with nationally significant resources.

About 1,800 of the 6,400 National Forest System sites will be under the charge program.

Additional funds for recreation programs are included in the appropriation Forest Protection and Utilization, Forest land management.

These are funds proposed for appropriation from admission and user fees collected under the Land and Water Conservation Fund Act of 1965, as amended (78 Stat. 897; 16 USC 4601-5; PL 93-81, 8/1/73). They would be used to operate and maintain recreation facilities on the National Forest System, including law and regulation enforcement to assure visitor safety and reduce vandalism. These funds assist in reaching current operation and maintenance standards.



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

A-11-32a

Type size:  
17 1/2 x 2 1/2

STANDARD FORM 300-1 CONSTRUCTION AND OPERATION OF RECREATION FACILITIES  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised. Program and Financing (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-5009-0-2-303				
<u>Program by activities:</u>				
Construction, reconstruction, administration, operation, and maintenance of recreation facilities (program costs, funded) 1/ .....	2,764	1,659	2,808	4,084
Change in selected resources (undelivered orders) .....	50	344	.....	.....
10.00 Total obligations .....	2,814	2,003	2,808	4,084
<u>Financing:</u>				
21.00 Unobligated balance avail- able, start of period .	-58	-124	-333	.....
24.00 Unobligated balance avail- able, end of period ...	124	333	.....	.....
40.00 Budget authority (appro- priation) .....	2,880	2,212	2,475	4,084
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	2,814	2,003	2,808	4,084
72.00 Obligated balance, start of period .....	249	313	926	1,000
74.00 Obligated balance, end of period .....	-313	-926	-1,000	-1,084
90.00 Outlays .....	2,750	1,390	2,734	4,000
1/ Includes capital outlay as follows: 1976, \$174 thousand; Transition Quarter, \$190 thousand; 1977, \$200 thousand; 1978 \$250 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



A-11-38

STANDARD FORM 300-1 CONSTRUCTION AND OPERATION OF RECREATION FACILITIES  
June 1973, Office of Management and Budget  
Circular No. A-11, Revised. Amounts Available for Appropriation (in thousands of dollars)

Amounts Available for Appropriation (in thousands of dollars)

Identification code	1976 actual	19 TQ actual	1977 estimate	1978 estimate
12-5009-0-2-303				
Unappropriated balance, start of period .....	95	9	958	825
Collections (offsetting receipts)	2,794	3,161	2,342	3,259
Total available for appropriation .....	2,889	3,170	3,300	4,084
Appropriation .....	-2,880	-2,212	-2,475	-4,084
Unappropriated balance, end of period .....	9	958	825	.....
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type also:  
17a MA/22

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
CONSTRUCTION AND OPERATION OF RECREATION FACILITIES

A-11-34a

STANDARD FORM 304-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.  
304-103T

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-5009-0-2-303				
Personnel compensation:				
11.1 Permanent positions.....	1,028	459	933	1,020
11.3 Positions other than permanent.....	700	496	588	650
11.5 Other personnel compensation.....	51	41	32	40
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	1,779	996	1,553	1,710
Personnel benefits:				
12.1 Civilian.....	178	99	155	171
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	35	33	32	35
22.0 Transportation of things ..	128	71	106	145
Rent, communications, and utilities:				
23.1 Standard level user charges	10	6	15	.....
23.2 Other rent, communications, and utilities .....	66	36	87	75
24.0 Printing and reproduction.....	2	2	2	5
25.0 Other services.....	225	226	512	1,493
26.0 Supplies and materials.....	280	398	261	325
31.0 Equipment.....	33	89	17	35
32.0 Lands and structures.....	88	53	76	100
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
<del>42.0 Insurance claims and indemnities.....</del>				
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Subtotal .....	2,824	2,009	2,816	4,094
95.0 Quarters and subsistence charges.....	-10	-6	-8	-10
99.0 Total obligations.....	2,814	2,003	2,808	4,084

(Mono cast: 22.13)

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(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5)





A-11-34a

STANDARD FORM 300-T CONST  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## Personnel Summary

300-101T







# YOUTH CONSERVATION CORPS

		<u>1/ Permanent full-time man-years</u>
Appropriation, 1976 .....	\$35,098,000	75
Transition quarter .....	(56,000)	
Appropriation, 1977 .....	<u>30,000,000</u>	<u>101</u>
Estimate, 1978 .....	16,200,000	62
Change .....	<u>-13,800,000</u>	<u>-39</u>

A net decrease of \$13,800,000, with a decrease of 39 permanent full-time man-years, is proposed as follows:

- (1) Decrease of \$14,000,000 in program level.
- (2) Increase of \$200,000 for costs of the pay increase effective in October 1976 (Executive Order 11941).

The proposed program will provide for 8,750 8-week positions which would benefit approximately 10,400 youths. More applicants are selected than positions budgeted because of split and short session camps.

For budgetary purposes, the entire appropriation is shown under the Forest Service. However, that portion of the appropriation allocated for the State grant program and one-half of the appropriation allocated for the Federal program is transferred to the Department of the Interior.

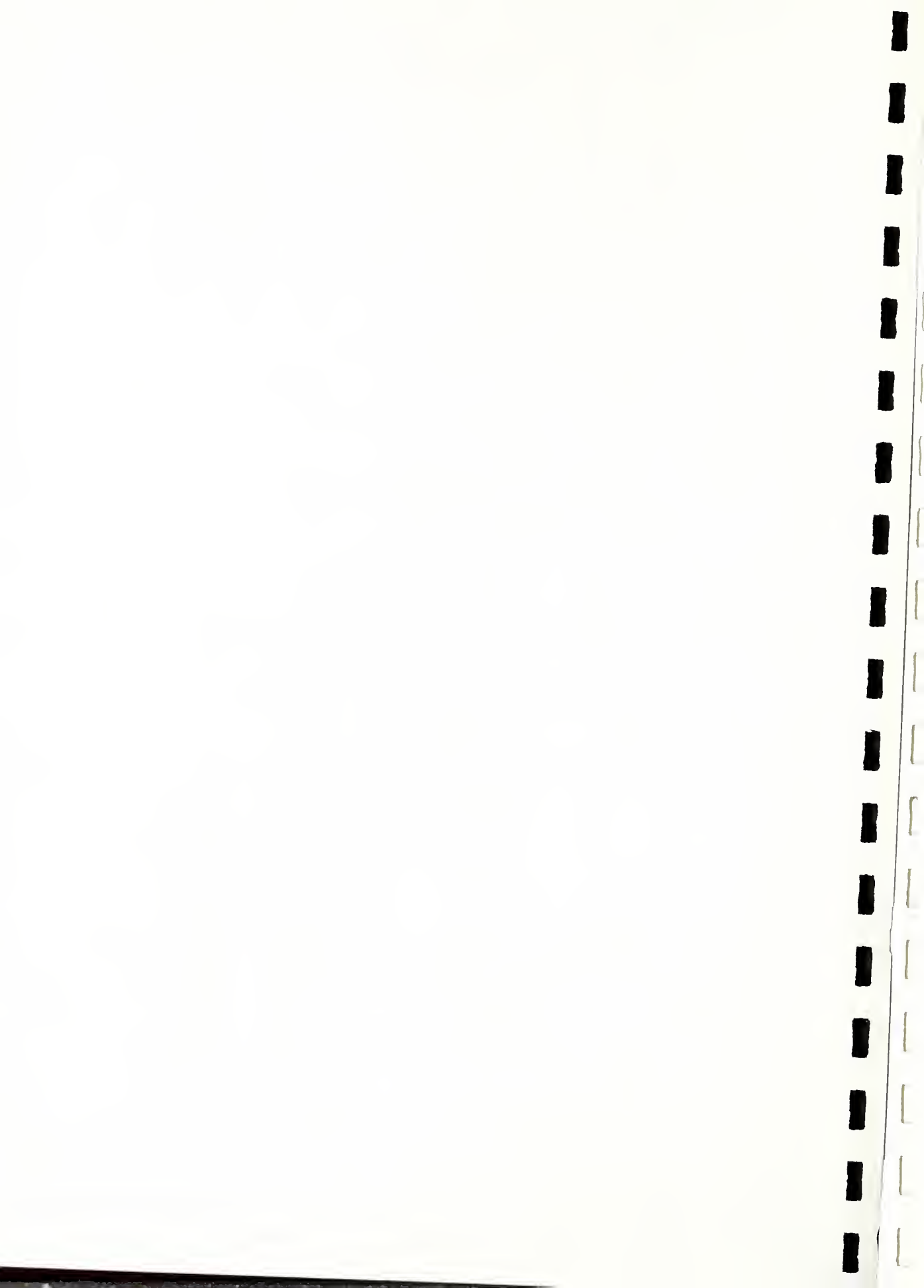
## PROJECT STATEMENT

Project	1976	Transition quarter	1977 estimate	1978 estimate	Change
Youth Conservation Corps .....	\$24,436,396	\$11,934,879	\$33,173,598	\$16,200,000	-16,973,598
Unobligated balance brought forward ....	-4,407,950	-15,069,554	-3,173,598	- -	+3,173,598
Unobligated balance carried forward ....	15,069,554	3,173,598	- -	- -	- -
Unobligated balance lapsing .....	- -	17,077	- -	- -	- -
Appropriation or estimate .....	35,098,000	56,000	30,000,000	16,200,000	-13,800,000

	<u>1976</u>	<u>Transition quarter</u>	<u>1977 estimate</u>	<u>1978 estimate</u>	<u>Change</u>
Capital investment .	\$2,457,000	- -	\$2,100,000	\$1,100,000	-\$1,000,000
Operation and maintenance .....	32,641,000	56,000	27,900,000	15,100,000	-12,800,000

GOAL: To provide gainful summer employment for young men and women in conservation work and offer a broad variety of educational experiences to them as they learn ways to improve the quality and productivity of land, air, and water.

-----  
1/ Excludes following man-years in Interior: 1976, 8; 1977, 46; 1978, 46.



The Act of August 13, 1970 (84 Stat. 794), as amended, authorizes the Youth Conservation Corps Program on Federal lands and a grant program to assist States in establishing YCC projects on non-Federal public lands. The Departments of the Interior and Agriculture jointly administer the program.

The primary purposes of the program are to:

- (1) Accomplish needed conservation work on public lands.
- (2) Provide gainful employment for 15-18 year-old males and females from all social, economic, ethnic, and racial classifications.
- (3) Develop an understanding and appreciation in participating youths of the Nation's natural environment and heritage.

This integrated conservation work, learn, and employment program is designed to accomplish needed conservation work, provide employment and income to youth, teach proper work habits, encourage greater appreciation of the management of natural resources, and increase individual pride and dignity. Conservation work-learn projects on public lands include recreation facilities maintenance and construction, range and wildlife habitat improvement, timber stand improvement, trail improvement and construction, and visitor information services. Recruiting guidelines have been established to meet the mandate of the Congress that there will be a representative mix of youth from all economic, social, and racial backgrounds. The policy is to use random selection to fill camp positions.

#### CONSERVATION WORK ACCOMPLISHED

Natural resources improvement and maintenance accomplishments performed by the Federal and grant programs in 1975 included:

	<u>Estimated Value</u> <sup>1/</sup>
Timber management and stand improvement .....	\$1,207,412
Recreation facilities construction and maintenance .....	4,784,460
Visitor information services .....	1,351,784
Range improvement .....	872,283
Wildlife habitat .....	962,471
Engineering construction, trails, etc. ....	1,610,476
Water and soil conservation .....	1,078,159
Other (camp construction and maintenance, administrative rates, and field research) .....	<u>2,061,695</u>
Total .....	13,928,740

<sup>1/</sup> The estimated values are measured in terms of the estimated cost of accomplishing the work through other means and not in terms of the benefits of the work accomplished.

#### Employment of Youth

Summer employment would be provided for 10,400 youth in all States and Territories. For most participants this would be their first opportunity to work and many would not otherwise find summer employment.





DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
YOUTH CONSERVATION CORPS

A-11-32a

Type use:  
176M/22

STANDARD FORM 300-1

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Program and Financing (in thousands of dollars)

Identification code	19 76 actual	19 77 actual	19 77 estimate	19 78 estimate
12-1125-0-1-302				
<u>Program by activities:</u>				
Program development (program costs, funded) 1/	18,740	16,823	31,174	18,200
Change in selected resources (undelivered orders) .....	5,696	-4,888	2,000	-2,000
10.00 Total obligations .....	24,436	11,935	33,174	16,200
<u>Financing:</u>				
21.00 Unobligated balance avail- able, start of period .	-4,408	-15,070	-3,174	.....
24.00 Unobligated balance avail- able, end of period ...	15,070	3,174	.....	.....
25.00 Unobligated balance lapsing	.....	17	.....	.....
40.00 <u>Budget authority</u> (appropriation) .....	35,098	56	30,000	16,200
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	24,436	11,935	33,174	16,200
72.00 Obligated balance, start of period .....	4,142	11,176	5,164	4,338
74.00 Obligated balance, end of period .....	-11,176	-5,164	-4,338	-2,154
77.00 Adjustments in expired accounts .....	-13	-7	.....	.....
90.00 Outlays .....	17,389	17,940	34,000	18,384
1/ Includes capital outlay as follows: 1976, \$125 thousand; Transition Quarter, \$39 thousand; 1977, \$150 thousand; 1978, \$100 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



STANDARD FORM 304-1  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised,  
304-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
YOUTH CONSERVATION CORPS

A-11-34b

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	10 76 actual	10 TQ actual	10 77 estimate	10 78 estimate
12-1125-0-1-302				
FOREST SERVICE				
Personnel compensation:				
11.1 Permanent positions.....	1,286	671	1,787	1,097
11.3 Positions other than permanent.....	1,298	1,389	1,688	1,206
11.5 Other personnel compensation.....	96	119	105	75
11.8 Special personal services payments.....	1,617	2,048	2,805	1,400
Total personnel compensation.....	4,297	4,227	6,385	3,778
Personnel benefits:				
12.1 Civilian.....	333	315	379	222
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	223	175	554	300
22.0 Transportation of things .....	210	184	265	150
Rent, communications, and utilities:				
23.1 Standard level user charges.....	32	10	55	.....
23.2 Other rent, communications, and utilities .....	187	168	270	125
24.0 Printing and reproduction.....	11	2	15	5
25.0 Other services.....	1,239	738	2,610	740
26.0 Supplies and materials.....	890	579	1,275	575
31.0 Equipment.....	145	94	115	50
32.0 Lands and structures.....	19	.....	25	15
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
42.0 Insurance claims and indemnities.....	2	15	.....	.....
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Subtotal .....	7,588	6,507	11,948	5,960
95.0 Quarters and subsistence charges .....	-30	-43	-25	-20
99.0 Total obligations, Forest Service.....	7,558	6,464	11,923	5,940

(Mono cast: 22.13)

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(Mono cast: 5)



STANDARD FORM 304-T  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised.  
506-103T

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
YOUTH CONSERVATION CORPS

A-11-34 b

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-1125-0-1-302				
ALLOCATION TO THE DEPARTMENT OF THE INTERIOR				
Personnel compensation:				
11.1 Permanent positions.....	232	233	1,361	1,322
11.3 Positions other than permanent.....	916	1,002	1,449	1,321
11.5 Other personnel compensation.....	26	30	30	20
<del>11.5 Other personnel compensation.....</del>				
<del>11.8 Special personal services payments.....</del>				
Total personnel compensation.....	1,174	1,265	2,840	2,663
Personnel benefits:				
12.1 Civilian.....	84	90	201	187
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	358	127	501	250
22.0 Transportation of things .....	84	94	118	60
Rent, communications, and utilities:				
23.1 Standard level user charges.....	16	12	20	20
23.2 Other rent, communications, and utilities .....	57	35	82	30
24.0 Printing and reproduction.....	66	15	92	40
25.0 Other services.....	4,950	3,099	7,847	2,000
26.0 Supplies and materials.....	532	519	745	350
31.0 Equipment.....	180	162	252	100
32.0 Lands and structures .....	2	.....	3	.....
<del>32.0 Lands and structures.....</del>				
<del>33.0 Investments and loans.....</del>				
41.0 Grants, subsidies, and contributions.....	9,375	53	8,550	4,560
<del>42.0 Insurance claims and indemnities.....</del>				
<del>43.0 Interest and dividends.....</del>				
<del>44.0 Refunds.....</del>				
Total obligations, Department of the Interior .....	16,878	5,471	21,251	10,260
99.0 Total obligations.....	24,436	11,935	33,174	16,200

(Mono cast: 22.13)

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A-11-34b

Type also:  
170M0/22

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Identification code	1976 actual	1977 TQ	1977 estimate	1978 estimate
12-1125-0-1-302				
FOREST SERVICE				
Total number of permanent positions	74		111	72
Full-time equivalent of other positions .....	151		193	140
Average paid employment .....	230		378	264
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
ALLOCATION TO THE DEPARTMENT OF THE INTERIOR				
Total number of permanent positions	8		46	46
Full-time equivalent of other positions .....	193		214	203
Average paid employment .....	201		258	247
Average GS grade .....	8.30		10.00	10.00
Average GS salary .....	\$16,000		\$18,300	\$18,300
Average salary of ungraded positions .....	\$9,000		\$9,000	\$9,000
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)









ACQUISITION OF LANDS FOR UINTA NATIONAL FOREST  
(All capital investment)

PROJECT STATEMENT

Project	:	1976	:	Transition:	1977	:	1978
	:		:	quarter	estimate	:	estimate
Acquisition of lands for Uinta National Forest .....	:		:			:	
	:	\$35:	:	\$4:	\$67,475:	:	- -
Unobligated balance brought forward .....	:	-67,514:	:	-67,479:	-67,475:	:	- -
Unobligated balance carried forward .....	:	67,479:	:	67,475:	- -:	:	- -
Appropriation or estimate .....	:	- -:	:	- -:	- -:	:	- -

Public Law 89-226 authorized the purchase of approximately 10,000 acres of non-Federally owned land within a described part of the Uinta National Forest in Utah for the purpose of promoting the control of floods and the reduction of soil erosion through restoration of adequate vegetative cover. \$300,000 were appropriated in fiscal year 1967.

As of September 30, 1976, 9,395 acres have been acquired at a cost of \$232,525.



ACQUISITION OF LANDS FOR WASATCH NATIONAL FOREST  
(All capital investment)

PROJECT STATEMENT

Project	:	1976	:	Transition:	1977	:	1978
	:		:	quarter	estimate	:	estimate
Acquisition of lands for Wasatch National Forest .....	:	\$1,000:	:	- -	:\$214,255:	:	- -
Unobligated balance brought forward .....	:	-215,255:	:	-214,255:	-214,255:	:	- -
Unobligated balance carried forward .....	:	214,255:	:	214,255:	- -	:	- -
Appropriation or estimate .....	:	- -	:	- -	- -	:	- -

The Act of September 14, 1962 (PL 87-661) provided authorization for the appropriation of \$400,000 for purchase of privately owned lands within the Wasatch National Forest in Utah to aid in control of floods and to reduce soil erosion. The full amount of this authorization has been appropriated with the funds remaining available until expended.

As of September 30, 1976, approximately 12,900 acres had been approved for purchase under this authority.



Type size:  
170M/22

DEPARTMENT OF AGRICULTURE

A-11-32a

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

FOREST SERVICE  
OTHER GENERAL APPROPRIATIONS

Program and Financing (in thousands of dollars)

Identification code	1976 actual	1976 TQ actual	1977 estimate	1978 estimate
12-9911-0-1-302				
<u>Program by activities:</u>				
1. Acquisition of lands for Uinta National Forest, Utah .....	.....	.....	68	.....
2. Acquisition of lands for Wasatch National Forest, Utah .....	1	.....	214	.....
3. Acquisition of lands for Cache National Forest, Utah .....	11	.....	.....	.....
10.00 Total costs-- obligations 1/ .	12	.....	282	.....
<u>Financing:</u>				
17.00 Recovery of prior period obligations .....	.....	-17	.....	.....
21.00 Unobligated balance available, start of period .....	-277	-265	-282	.....
24.00 Unobligated balance available, end of period .....	265	282	.....	.....
<u>Budget authority</u> <u>(appropriation)</u> ....	.....	.....	.....	.....
<u>Relation of obligations to</u> <u>outlays:</u>				
71.00 Obligations incurred, net	12	-17	282	.....
72.00 Obligated balance, start of period .....	18	28	-2	.....
74.00 Obligated balance, end of period .....	-28	2	.....	.....
90.00 Outlays .....	2	13	280	.....
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





## DEPARTMENT OF AGRICULTURE

A-11-32a

## FOREST SERVICE

## OTHER GENERAL APPROPRIATIONS

Type size:  
170M/22

## STANDARD FORM 300-T

June 1975, Office of Management and Budget

Circular No. A-11, Revised

Program and Financing (in thousands of dollars)--continued

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-9911-0-1-302				
Distribution of outlays by account:				
Acquisition of lands for:				
Uinta National Forest	.....	1	67	.....
Wasatch National Forest	2	1	213	.....
Cache National Forest	.....	11	.....	.....
1/ Includes capital outlay as follows: 1976, \$11 thousand; Transition Quarter, -\$17 thousand; 1977, \$280 thousand; 1978, \$0.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-9911-0-1-302				
<del>Personnel compensation:</del>				
11.1 <del>Permanent positions</del>				
11.2 <del>Positions other than permanent</del>				
11.5 <del>Other personnel compensation</del>				
11.8 <del>Special personal services payments</del>				
Total personnel compensation				
<del>Personnel benefits:</del>				
12.1 <del>Civilian</del>				
12.2 <del>Benefits for former personnel</del>				
21.0 <del>Travel and transportation of persons</del>				
22.0 <del>Transportation of things</del>				
23.0 <del>Rent, communications, and utilities</del>				
24.0 <del>Printing and reproduction</del>				
25.0 Other services	1	.....	.....	.....
26.0 <del>Supplies and materials</del>				
31.0 <del>Equipment</del>				
32.0 Lands and structures	11	.....	282	.....
33.0 <del>Investments and loans</del>				
41.0 <del>Grants, subsidies, and contributions</del>				
42.0 <del>Insurance claims and indemnities</del>				
43.0 <del>Interest and dividends</del>				
44.0 <del>Refunds</del>				
99.0 Total obligations	12	.....	282	.....

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(Mono cast: 5)



Type size:  
170M6/22

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised. Proc

Program and Financing (in thousands of dollars)

Identification code	76 actual	TQ actual	77 estimate	78 estimate
12-3911-0-4-302				
<u>Program by activities:</u>				
1. Services for other Federal agencies .....	2,261	136	2,169	.....
2. Forest research at experimental forests and ranges and for foreign countries	8	.....	3	.....
3. Older Americans Community Service (Department of Labor) .....	3,622	1,072	3,728	.....
4. National Operation Mainstream program (Department of Labor) .....	9	1	1	.....
5. Job Opportunity program (Department of Commerce)	20,027	3,907	3,194	.....
Total program costs, funded 1/ .....	25,927	5,116	9,095	.....
Change in selected resources (undelivered orders) .....	7,250	-15	-2,000	.....
10.00 Total obligations .....	33,177	5,101	7,095	.....
<u>Financing:</u>				
Offsetting collections from:				
11.00 Federal funds .....	-28,980	.....	.....	.....
21.00 Unobligated balance available, start of period .	-16,395	-12,198	-7,097	-2
24.00 Unobligated balance available, end of period ...	12,198	7,097	2	2
Budget authority .....	.....	.....	.....	.....
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



A-11-32a

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.      Progr

## Program and Financing (in thousands of dollars)--continued

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-3911-0-4-302				
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	4,197	5,101	7,095	.....
72.00 Obligated balance, start of period .....	1,192	9,462	6,738	.....
74.00 Obligated balance, end of period .....	-9,462	-6,738	.....	.....
90.00 Outlays .....	-4,073	7,825	13,833	.....
1/ Includes capital outlay as follows: 1976, \$3,664 thousand; Transition Quarter, \$1,110 thousand; 1977, \$1,000 thousand; 1978, \$0.				

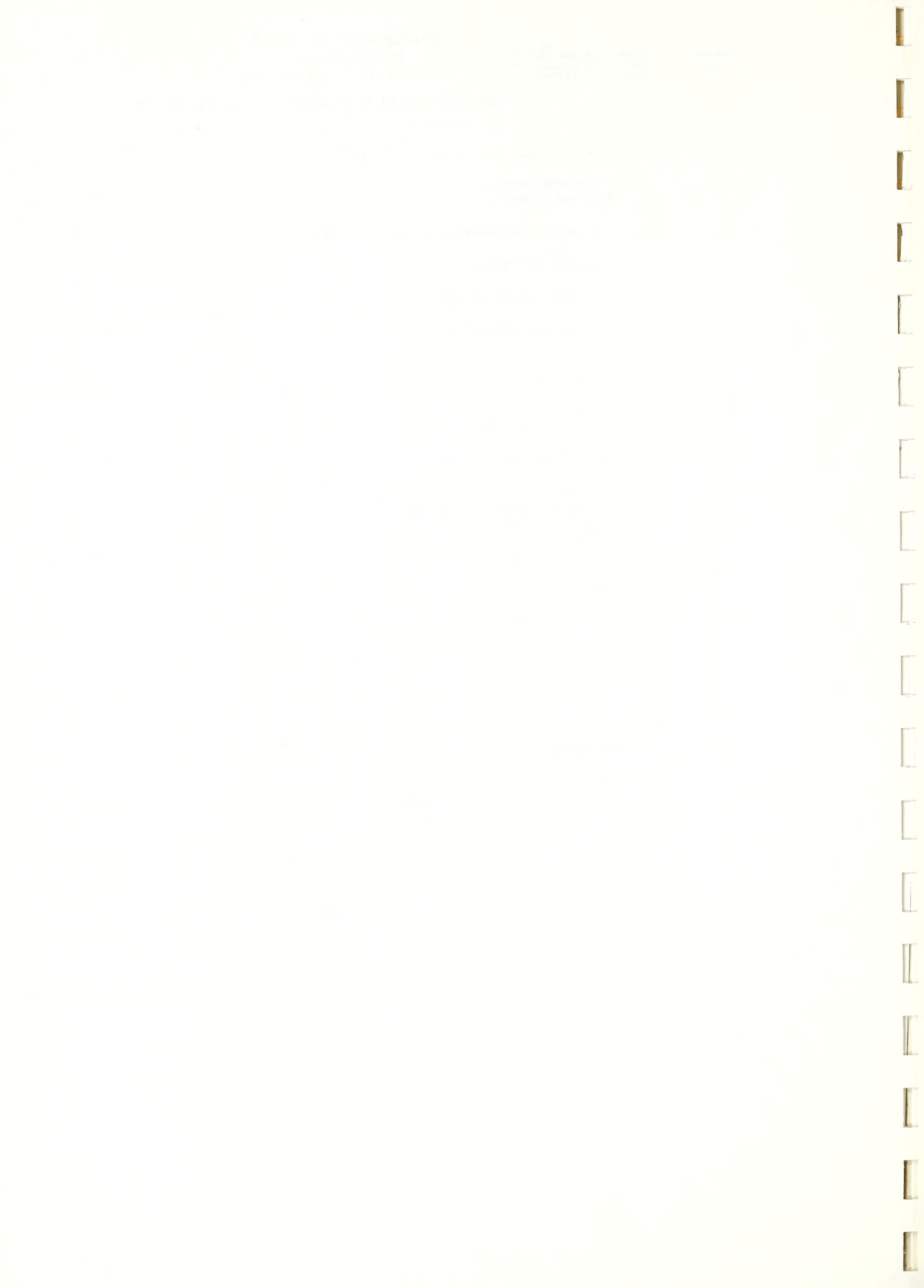
300-101T





**OBJECT CLASSIFICATION (in thousands of dollars)**

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-3911-0-4-302				
<b>Personnel compensation:</b>				
11.1 Permanent positions.....	930	140	350	.....
11.3 Positions other than permanent.....	14,190	3,720	3,425	.....
11.5 Other personnel compensation.....	122	45	.....	.....
11.8 Special personal services payments.....	1	9	.....	.....
<b>Total personnel compensation.....</b>	<b>15,243</b>	<b>3,914</b>	<b>3,775</b>	<b>.....</b>
<b>Personnel benefits:</b>				
12.1 Civilian.....	975	238	245	.....
13.0 Benefits for former personnel.....	-26	.....	.....	.....
21.0 Travel and transportation of persons.....	276	103	82	.....
22.0 Transportation of things .....	597	170	20	.....
<del>Rent, communications, and utilities:</del>				
<del>23.1 Standard level user charges</del>				
23.2 Other rent, communications, and utilities .....	120	28	17	.....
24.0 Printing and reproduction.....	2	2	10	.....
25.0 Other services.....	7,972	-1,593	2,877	.....
26.0 Supplies and materials.....	1,053	169	67	.....
31.0 Equipment.....	189	24	8	.....
32.0 Lands and structures.....	5	1	.....	.....
<del>33.0 Investments and loans</del>				
41.8 Grants, subsidies, and contributions.....	6,801	2,035	.....	.....
<del>42.0 Insurance claims and indemnities</del>				
42.0 Insurance claims and indemnities	8	15	.....	.....
<del>43.0 Interest and dividends</del>				
<del>44.0 Refunds</del>				
<b>Subtotal .....</b>	<b>33,215</b>	<b>5,106</b>	<b>7,101</b>	<b>.....</b>
95.0 Quarters and subsistence charges .....	-38	-5	-6	.....
<b>99.0 Total obligations.....</b>	<b>33,177</b>	<b>5,101</b>	<b>7,095</b>	<b>.....</b>
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



**STANDARD FORM 300-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## Personnel Summary

[illegible]







## ADMINISTRATIVE PROVISIONS, FOREST SERVICE

### Proposed Changes in Language

Changes in language are proposed as follows. New language is underscored and deleted matter is enclosed in brackets.

- 1 Appropriations to the Forest Service for the current fiscal year shall  
2 be available for: (a) purchase of not to exceed two hundred [thirty-two]  
3 ~~sixty-seven~~ passenger motor vehicles of which [one] two hundred [fifty-  
4 ~~seven~~] six shall be for replacement only, and hire of such vehicles;  
5 operation and maintenance of aircraft and the purchase of not to exceed  
6 four for replacement only .... [(e) expenses of the National Forest Reserva-  
7 tion Commission as authorized by section 14 of the Act of March 1, 1911  
8 (16 U.S.C. 514); (f)] (e) acquisition of land .... Act of August 3, 1956  
9 (7 U.S.C. 428a); [(g)] (f) expenses incident .... and [(h)] (g) not to  
10 exceed ....
- 11 [None of the funds made available under this Act shall be obligated or  
12 expended to change the boundaries of any region, to abolish any region,  
13 to move or close any regional office for research, State and private  
14 forestry, and National Forest System administration of the Forest Service,  
15 Department of Agriculture, without the consent of the House and Senate  
16 Committees on Appropriations and the Committee on Agriculture and Forestry  
17 in the U. S. Senate and the Committee on Agriculture in the U. S. House  
18 of Representatives.]

Changes 1 and 2 would provide authority to purchase 267 passenger motor vehicles of which 206 will be replacements.

### PASSENGER-CARRYING VEHICLES

#### Replacements

During fiscal year 1978, it is proposed that the Forest Service replace 206 passenger-carrying vehicles. Of these, 201 will meet replacement standards and five will require replacement because of accidents or excessive maintenance costs.

Dependability of passenger-carrying vehicles is an important factor in keeping work programs on schedule and in meeting emergencies. Vehicle breakdowns while on field travel cause disruptions and delays in field work as well as loss of effective work time of employees. The continued use of over-aged equipment is undesirable from a safety standpoint since most of it is operated over rough, narrow, winding roads in mountainous country under adverse conditions. This use generally results in excessive operating and repair expenses when vehicles reach or exceed replacement standards.

In order to maintain passenger-carrying vehicles in a safe and satisfactory operating condition, it is the policy of the Forest Service to schedule periodic preventive maintenance inspections, services, and tune-ups to reduce the necessity for costly repairs and major overhauls, and to minimize lost time resulting from field breakdowns.

It is desirable to maintain a reasonable balance in the age class of the passenger vehicle inventory. The age class distribution is based upon conforming with replacement standards which recognize that some units will be retired under the age standards and others under the use standard. Prescribed replacement standards, although applicable, are not always appropriate for all Forest Service vehicles because of the wide range of operating conditions and the comparatively short field season in many of the National Forests at higher elevations. Decision on replacement of passenger-carrying vehicles which reach replacement age is based on an appraisal of each unit. This involves a review of the history record combined with a mechanical inspection of the vehicle's condition and repair liability. When such





appraisal indicates that the vehicle is satisfactory for further service without unreasonable repair expenditures, it is retained and assigned to lighter work, even though such action tends to upset the age standards for the fleet inventory.

The vehicles selected for replacement are those which cannot be operated another season without excessive repair expense. They are unsatisfactory for further use both as to safety and mechanical condition. The replacement authorization requested is within the normal annual replacement standards prescribed by the General Services Administration.

Essentially all passenger-carrying vehicles are pooled for use by all activities with replacement of pooled units financed from a Working Capital Fund. All appropriations reimburse this fund in ratio to use of vehicles on activities financed by the respective appropriations.

None of the replacements requested will be assigned to areas served or scheduled to be served by Interagency pools.

#### Additions

It is proposed that the Forest Service purchase 61 additional passenger-carrying vehicles to replace trucks, pickups, carryalls and sedan deliveries. Since sedans and station wagons are better suited to the needs and are less costly to operate, we prefer replacement with passenger-carrying vehicles.

Sedans or station wagons cost less to operate and maintain than a truck. During fiscal year 1977, the Forest Service is replacing 75 light trucks, such as carryalls, pickups, panels, and sedan delivery trucks, with sedans and station wagons. The total estimated cost savings is \$15,000 per year. The substitution of 61 passenger-carrying vehicles for light trucks in fiscal year 1978 would result in an additional savings of about \$12,200 each year.

The Forest Service analyzes current work plans and programs in determining its overall passenger-carrying vehicle requirements. This analysis includes a careful study of the number of vehicles needed at each field station using as a guiding principle the ownership of only the minimum number of dependable units required to serve programs for which funds are budgeted. Also, it is Forest Service policy to utilize Interagency Motor Pools or commercial car rental services to the fullest practicable extent. Passenger car use is restricted and is integrated with various activities to attain good utilization of all vehicles.

Additions are financed from program funds in direct relationship to the anticipated use of the equipment. Distribution of costs to appropriations is based on analysis of use of the equipment fleet for the past three years and the estimated use for the budget year.

#### Number of Vehicles

The Forest Service had a fleet of 1,083 passenger-carrying vehicles at the start of fiscal year 1977. It is planned to add 75 units during the year, making a total of 1,158 units available at the start of fiscal year 1978, excluding possible transfers to other agencies. It is proposed that the total number of passenger-carrying vehicles be increased to 1,219 by the end of fiscal year 1978.

As of June 30, 1976, the age and mileage classes of the passenger-carrying vehicles on hand, exclusive of 43 buses, were:



Age Data

<u>Year</u>	<u>Number of Vehicles</u>
1971 and older .....	231
1972 .....	64
1973 .....	260
1974 .....	241
1975 .....	179
1976 .....	<u>65</u>
Total .....	1,040

Mileage Data

<u>Miles</u>	<u>Number of Vehicles</u>
60,000 and over .....	276
50,000 to 59,999 .....	118
40,000 to 49,999 .....	146
30,000 to 39,999 .....	167
20,000 to 29,999 .....	125
10,000 to 19,999 .....	123
0 to 9,999 .....	<u>85</u>
Total .....	1,040

Use of Vehicles

Passenger-carrying vehicles are used by:

- (1) Forest officers in the protection, utilization, management, and development of the National Forests and land utilization projects and in the program for control of forest pests.
- (2) Research technicians on experimental forests and ranges, on field research projects and forest surveys.
- (3) Foresters engaged in carrying out the laws providing for State and private forestry cooperation.
- (4) Regional office field-going administrative personnel in performing, directing, and inspecting field work.

The Forest Service is essentially a field organization and its passenger-carrying vehicles are located mainly at regional, National Forest, and ranger district headquarters, and experimental forests and ranges. There are over 225 million acres within the exterior boundaries of the National Forests.

About 726 million acres of State and private forest land are included within the areas which benefit from Federal participation in the cooperative forest program. Much of this area is without common carrier service, and most forest areas and research centers are remote from commercial travel routes, requiring extensive use of motor vehicles as a means of transportation. The major portion of transportation needs, particularly at regional and forest supervisor levels and at other larger headquarters, involves multiple passenger use and can be more expeditiously and economically met by use of sedans and station wagons than by other types of vehicles.



## AIRCRAFT

### Replacement of Aircraft

The 1978 estimates propose replacement of 4 aircraft by purchase to replace leased or older Service-owned aircraft which are no longer suitable for aerial retardant leadplanes used in fighting forest fires.

The current fleet composition is as follows:

6	Single engine reconnaissance and transport aircraft
16	Light twin-engine reconnaissance and transport aircraft
10	Medium and heavy cargo and transport aircraft (6 medium, 4 heavy)
1	Multi-engine aircraft converted to an air tanker
33	Government-owned Forest Service aircraft
19	Leased aircraft (leased but operated by Forest Service during critical periods)
52	Total currently operated aircraft

There is a need to obtain light twin-engine aircraft for leadplane operation. The alternatives of providing aircraft by lease and from excess military aircraft have been evaluated. Only the procurement of new aircraft will provide a suitably compatible and safe aircraft for the leadplane mission. The new aircraft will replace some of the leased aircraft, and some of the older light twin aircraft which are no longer suitable for leadplane operation.

Annually there are 10 to 12 thousand fires which occur on National Forest and adjacent lands. Chemical fire retardant drops from air tankers is one of the methods used for fire suppression. About 50 tankers are contracted by the Forest Service for this purpose. Safe and effective use of retardant necessitates direct supervision and control by an air tanker boss who is a Forest Service pilot and who flies a leadplane. This approach gives the air tanker boss the ability to establish the attack area, determine flight patterns with approach and recovery routes, and actually lead the air tanker on the drop run showing specifically where the drop is to be accomplished. Light, fast maneuverable aircraft are necessary for use as leadplanes.

Changes 3, 4, and 5 would eliminate provisions for the payment of expenses of the National Forest Reservation Commission. The provisions of the Act of March 1, 1911, which authorized this Commission were repealed by the National Forest Management Act of 1976 (PL 94-588, October 22, 1976).

Change 6 would eliminate the language to assure that the present Forest Service regional system is maintained and that the Congress has a role in any further regional reorganization plans.

If the Appropriations Committees were to continue to include language in appropriations bills requiring Congressional approval of reorganization proposals, the ability to implement needed reorganizations would be considerably slowed.

The Forest Service has made many changes in organization through the years to obtain the most efficient economic operation. These changes came as a result of extensive study and considered improved transportation, technology and methods of doing business. The administration of the National Forest System has been improved as a result of these changes.

This language might limit the ability of Forest Service management to take advantage of opportunities to improve efficiency and effectiveness by shifting regional boundaries.

It is proposed that this language not be included in future appropriation bills.

The Forest Service plans to obtain the views of the Appropriations Subcommittees and the Agriculture and Forestry Committees in the House and Senate and members of Congress who would be affected before implementing regional reorganization plans even without this language.









ROADS AND TRAILS FOR STATES, NATIONAL FORESTS FUND  
(Permanent appropriation)

Appropriation, 1976 .....	\$35,908,943
Transition quarter .....	(49,809,598)
Appropriation, 1977 .....	13,578,435
Estimate, 1978 .....	51,850,000
Change .....	<u>+38,271,565</u>

The permanent appropriation of 10 percent of National Forest receipts pursuant to the Act of March 4, 1913 (16 USC 501) is transferred to and merged with the annual appropriation for Forest Roads and Trails. The explanation of the use of these funds is included in the justification for that appropriation item under the forest road program.

Change is due to estimated receipts for the twelve-month period in fiscal year 1977 over those estimated for the three-month period in the transition quarter.



EXPENSES, BRUSH DISPOSAL  
(Permanent appropriation)  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
Appropriation, 1976 .....	\$28,906,310	444
Transition quarter .....	(10,645,307)	
Estimate, 1977 .....	33,000,000	494
Estimate, 1978 .....	34,290,000	533
Change .....	<u>+1,290,000</u>	<u>+39</u>

PROJECT STATEMENT

	:	:	:	:	:	:
Project	1976	Transition quarter	1977 estimate	1978 estimate	Change	
Brush disposal .....	\$26,366,674:	\$8,437,890:	\$30,486,000:	\$36,126,000:	+\$5,640,000	
Unobligated balance	:	:	:	:	:	
brought forward ...	:-24,101,112:	-26,640,748:	-28,848,165:	-31,362,165:	-2,514,000	
Unobligated balance	:	:	:	:	:	
carried forward ...	: 26,640,748:	28,848,165:	31,362,165:	29,526,165:	-1,836,000	
Appropriation or	:	:	:	:	:	
estimate .....	: 28,906,310:	10,645,307:	33,000,000:	34,290,000:	+1,290,000	

GOAL: To increase the overall productivity of forest lands.

An increase of \$5,640,000 in program level is proposed, with an increase of 39 permanent full-time man-years.

Timber cutting usually increases the fire hazard because of dry fuel increase in the form of logging slash. This slash may also:

- (1) Impair reforestation.
- (2) Contribute to the buildup of insect populations.
- (3) Cause damage to stream channels.
- (4) Degrade esthetics of the forest environment.

When disposal of brush and other debris is necessary, National Forest timber sale contracts require treatment or deposit of funds for treatment of debris resulting from timber sale operations. When economical and expedient the work is performed by the timber purchaser. When not done by the purchaser, it is done by the Government, using deposits to cover costs of the work as authorized under Section 6 of the Act of April 24, 1950 (16 USC 490).

The effect of timber cutting and the manner of treating slash varies widely among regions. Brush disposal may be accomplished in several ways such as crushing, chipping, burning, or extra fire protection through the critical phase of natural disposal. Combinations of these are often used.

In the Eastern Regions, low volume cut per acre, high utilization, and rapid decomposition reduce the slash disposal work necessary. Exceptions occur in sales where a heavy cut per acre is made, such as the jack pine stands of some Lake States. In such areas, slash is crushed and mixed with mineral soil by disking with heavy equipment or disposed of by burning under prescription. This reduces the hazard and provides a good seedbed to aid regeneration. Treatment of slash to prevent insect epidemics is sometimes necessary in these areas.



In contrast, more slash disposal is required on most sale areas of the West. High volume per acre generally produces heavy slash. Long dry periods with lightning and man-caused fire risk result in extremely hazardous fire potential. The warm, humid conditions necessary for rapid slash deterioration seldom occur. Treatment varies greatly with different methods of cutting, but generally requires some burning to reduce volumes of slash fuels. Slash may be burned in place or piled and burned under varied weather conditions. Fuel arrangements are planned which allow burning at times when smoke dispersal is favorable and will not influence air quality in populated areas. The emphasis on more complete timber utilization will reduce the volumes of slash fuels that will be disposed of by burning.

Within regions, slash disposal follows general prescriptions. Individual needs of each sale are planned and appraised prior to advertisement of the sale. The appropriate specific requirements are incorporated into each timber sale contract. In each instance, the method used will require adequate ecological, environmental, and resource protection at the least expense.



LICENSEE PROGRAMS  
(Permanent appropriation)  
(All operation and maintenance)

		<u>Permanent full-time man-years</u>
Appropriation, 1976 .....	\$229,827	3
Transition quarter .....	(37,404)	
Estimate, 1977 .....	300,000	<u>4</u>
Estimate, 1978 .....	310,000	<u>4</u>
Change .....	<u>+10,000</u>	<u>- -</u>

PROJECT STATEMENT

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
Licensee Programs:					
Smokey Bear .....	\$173,873:	\$32,047:	\$227,000:	\$252,000:	+\$25,000
Woodsy Owl .....	54,856:	2,981:	50,000:	74,000:	+24,000
Unobligated balance brought forward .....	-230,665:	-231,763:	-234,139:	-257,139:	-23,000
Unobligated balance carried forward .....	231,763:	234,139:	257,139:	241,139:	-16,000
Appropriation or estimate .....	229,827:	37,404:	300,000:	310,000:	+10,000

Fees for the use of characters by private enterprises are collected under regulations promulgated by the Secretary and are available as follows:

- (1) Smokey Bear--for furthering the nationwide forest fire prevention campaign (18 USC 711 and 31 USC 488a).
- (2) Woodsy Owl--for promoting wise use of the environment and programs which foster maintenance and improvement of environmental quality (31 USC 488b-3--6).

Examples of Recent Accomplishments

Smokey Bear. The original living Smokey Bear died in his sleep the morning of November 9, 1976, in his retirement cage at the National Zoo in Washington, DC. He was buried that day at the Smokey Bear Historical State Park, Capitan, New Mexico. Smokey served at his post for 24 years before retiring in May of 1975 and turning over his responsibilities to Little Smokey. The current living symbol, Smokey Bear, lives on happily at the National Zoo carrying on the work of forest fire prevention.

Through the Advertising Council, Inc., efforts with the mass media outlet of radio and television, the Smokey Bear program received public service time estimated to be worth more than \$35 million in 1975.

In 1976 the Advertising Council, Inc., conducted an analysis to determine overall public awareness of, and attitude toward, the Smokey Bear program. The analysis concludes that:

- (1) 98 percent of the public is aware of the forest fire prevention program.
- (2) Four out of five people feel that the national campaign to prevent forest fires is successful, and they attribute this success to the fact that the public has been made aware of the dangers of forest fires.





- (3) Smokey Bear is completely associated with forest fire prevention and forest fire prevention advertising.
- (4) Almost everyone has heard of the slogan, "Only You Can Prevent Forest Fires".
- (5) Two-thirds of those who had heard the slogan felt it meant that forest fire prevention is the responsibility of individuals.

This analysis will serve as a bench mark in analyzing future Smokey Bear efforts, activities, and effectiveness. It will also serve to direct the current efforts of the program.

Woodsy Owl. Assisted General Federation of Women's Clubs Juniors in Woodsy Owl projects to improve the environment of local club communities. The success of these projects has encouraged the General Federation of Women's Clubs Juniors to sponsor Woodsy Owl projects for two more years.

Launched new efforts in environmental education and recreationist manners which will capitalize on Woodsy's appeal to young people and help improve environmental quality.

1. The first part of the report is a description of the work done during the year.

2. The second part is a description of the work done during the year.

3. The third part is a description of the work done during the year.

4. The fourth part is a description of the work done during the year.

5. The fifth part is a description of the work done during the year.

6. The sixth part is a description of the work done during the year.

RESTORATION OF FOREST LANDS AND IMPROVEMENTS  
(Permanent appropriation)  
(All operation and maintenance)

Appropriation, 1976 .....	\$51,201
Transition quarter .....	(15,542)
Estimate, 1977 .....	50,000
Estimate, 1978 .....	50,000

PROJECT STATEMENT

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
Restoration of forest lands and improvements .....	\$33,780:	\$4,690:	\$50,000:	\$50,000:	- -
Unobligated balance brought forward .	-48,672:	-66,093:	-76,945:	-76,945:	- -
Unobligated balance carried forward .	66,093:	76,945:	76,945:	76,945:	- -
Appropriation or estimate .....	51,201:	15,542:	50,000:	50,000:	- -

Recoveries from cash bonds or forfeitures under surety bonds by permittees or timber purchasers, who fail to complete performance of improvement, protection, or rehabilitation work required under the permit or timber sale contract, are used to cover the cost to the United States of completing such work on lands under Forest Service administration. Funds received as settlement of a claim are used for improvement, protection, or rehabilitation made necessary by the action which led to the cash settlement (Act of June 20, 1958, 16 USC 579c).



## DEPARTMENT OF AGRICULTURE

A-11-32a

## FOREST SERVICE

## PERMANENT APPROPRIATIONS

## Program and Financing (in thousands of dollars)

Type des:  
170M/22

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-9922-0-2-302				
<u>Program by activities:</u>				
Direct program:				
1. Roads and trails for States, national forests fund ....	35,909	49,810	13,578	51,850
2. Brush disposal ..	26,656	8,584	29,486	35,626
3. Licensee programs, Forest Service .	275	30	217	323
4. Restoration of forest lands and improvements ...	33	5	50	50
Total program costs, funded 1/ .....	62,873	58,429	43,331	87,849
Change in selected resources (undelivered orders) .....	-335	-141	1,060	503
10.00 Total obligations .	62,538	58,288	44,391	88,352
Financing:				
Offsetting collections from:				
14.00 Non-Federal sources ...	.....	-1	.....	.....
21.00 Unobligated balance avail- able, start of period	-24,380	-26,939	-29,159	-31,696
24.00 Unobligated balance avail- able, end of period ..	26,939	29,159	31,696	29,844
60.00 <u>Budget authority</u> <u>(appropriation)</u> <u>(permanent, indefinite,</u> <u>special funds) .....</u>	65,096	60,508	46,928	86,500
<u>Distribution of budget</u> <u>authority by account:</u>				
Roads and trails for States, national forests fund .....	35,909	49,810	13,578	51,850
Brush disposal .....	28,906	10,645	33,000	34,290
Licensee programs, Forest Service .....	230	37	300	310
Restoration of forest lands and improvements	51	16	50	50
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



## DEPARTMENT OF AGRICULTURE

A-11-32a

## FOREST SERVICE

## PERMANENT APPROPRIATIONS

Type class:  
179M/22

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## Program and Financing (in thousands of dollars)--continued

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-9922-0-2-302				
<u>Relation of obligations to outlays:</u>				
71.00 Obligations incurred, net	62,538	58,288	44,391	88,352
72.00 Obligated balance, start of period .....	3,968	3,142	3,918	3,988
74.00 Obligated balance, end of period .....	-3,142	-3,918	-3,988	-5,190
90.00 Outlays .....	63,364	57,512	44,321	87,150
<u>Distribution of outlays by account:</u>				
Roads and trails for States, national forests fund .....	35,909	49,810	13,578	51,850
Brush disposal .....	27,180	7,656	30,415	34,945
Licensee programs, Forest Service .....	239	40	278	305
Restoration of forest lands and improvements	36	6	50	50
1/ Includes capital outlay as follows: 1976, \$887 thousand; Transition Quarter, \$564 thousand; 1977, \$890 thousand; 1978, \$1,000 thousand.				
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





**OBJECT CLASSIFICATION (in thousands of dollars)**

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-9922-0-2-302				
<b>Personnel compensation:</b>				
11.1 Permanent positions.....	6,823	1,635	8,385	9,038
11.3 Positions other than permanent.....	7,751	2,521	9,846	10,695
11.5 Other personnel compensation.....	1,412	806	1,634	2,000
11.8 Special personal services payments.....	4	1	4	5
<b>Total personnel compensation.....</b>	<b>15,990</b>	<b>4,963</b>	<b>19,869</b>	<b>21,738</b>
<b>Personnel benefits:</b>				
12.1 Civilian.....	1,505	394	1,847	2,021
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	505	60	647	650
22.0 Transportation of things .....	1,686	537	1,934	2,385
<b>Rent, communications, and utilities:</b>				
23.1 Standard level user charges.....	285	69	365	375
23.2 Other rent, communications, and utilities .....	834	136	1,171	1,180
24.0 Printing and reproduction.....	27	5	33	50
25.0 Other services.....	39,065	51,129	15,068	56,168
26.0 Supplies and materials.....	1,395	564	1,875	2,000
31.0 Equipment.....	995	341	1,297	1,400
32.0 Lands and structures.....	395	124	459	560
<del>33.0 Investments and loans.....</del>				
<del>41.0 Grants, subsidies, and contributions.....</del>				
42.0 Insurance claims and indemnities.....	17	10	10	25
<del>43.0 Interest and dividends.....</del>				
44.0 Refunds.....	1	.....	.....	.....
<b>Subtotal</b>	<b>62,700</b>	<b>58,332</b>	<b>44,575</b>	<b>88,552</b>
95.0 Quarters and subsistence charges.....	-162	-45	-184	-200
<b>direct</b>				
99.0 Total obligations.....	62,538	58,287	44,391	88,352
<b>Total reimbursable obligations</b>	<b>.....</b>	<b>1</b>	<b>.....</b>	<b>.....</b>
99.0 Total obligations .....	62,538	58,288	44,391	88,352
(Mono cast: 22.12)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



**STANDARD FORM 300-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## Personnel Summary

<small>Identification code</small>	<small>1976 actual</small>	<small>10 TO actual</small>	<small>19 77 estimate</small>	<small>19 78 estimate</small>
12-9922-0-2-302				
Total number of permanent positions .....	583		668	707
Full-time equivalent of other positions .....	930		1,080	1,168
Average paid employment .....	1,402		2,028	2,222
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



PAYMENT TO MINNESOTA (COOK, LAKE, AND ST. LOUIS COUNTIES)  
FROM THE NATIONAL FORESTS FUND  
 (Permanent appropriation)  
 (All operation and maintenance)

Appropriation, 1976 .....	\$259,038
Transition quarter .....	(259,038)
Appropriation, 1977 .....	64,760
Estimate, 1978 .....	259,038
Change .....	<u>+194,278</u>

PROJECT STATEMENT

<u>Project</u>	: 1976	: quarter	: Transition: 1977	: estimate	: 1978	: estimate	: Change
Payment to Minnesota from the	:	:	:	:	:	:	:
National Forests Fund	:	:	:	:	:	:	:
(appropriation or estimate) .....	:\$259,038:	\$259,038:	\$64,760:	\$259,038:	+\$194,278	:	:
	:	:	:	:	:	:	:

The Act of June 22, 1948, as amended (16 USC 577c-577h) provides that the Secretary of the Treasury, upon certification of the Secretary of Agriculture, shall pay to the State of Minnesota at the close of each fiscal year from any National Forest receipts not otherwise appropriated an amount equivalent to three-fourths of one percent of the fair appraised value of certain National Forest lands in the counties of Cook, Lake, and St. Louis situated within the Superior National Forest. The Act further provides that payment to the State shall be distributed to each of these counties in conformity with the fair appraised value of such National Forest lands in each county.

Change is due to estimated receipts for the twelve-month period in fiscal year 1977 over those estimated for the three-month period in the transition quarter.



PAYMENTS TO COUNTIES, NATIONAL GRASSLANDS  
 (Permanent appropriation)  
 (All operation and maintenance)

Appropriation, 1976 .....	\$985,510
Estimate, 1977 .....	990,000
Estimate, 1978 .....	<u>1,000,000</u>
Change .....	<u>+10,000</u>

PROJECT STATEMENT

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
Payment to counties					
(appropriation or estimate) .	\$985,510	- -	\$990,000	\$1,000,000	+\$10,000

At the end of each calendar year, 25 percent of the revenues from use of submarginal lands are paid to counties under the provisions of Title III of the Bankhead-Jones Farm Tenant Act, approved July 22, 1937 (7 USC 1012). Payments are made on the provision that they are used for school or road purposes, or both.

Change is due to anticipated increase in receipts.





PAYMENTS TO SCHOOL FUNDS, ARIZONA AND NEW MEXICO

(Permanent appropriation)  
(All operation and maintenance)

Appropriation, 1976 .....	\$76,827
Transition quarter .....	(146,747)
Appropriation, 1977 .....	38,200
Estimate, 1978 .....	150,000
Change .....	<u>+111,800</u>

PROJECT STATEMENT

Project	1976	Transition: quarter	1977 estimate	1978 estimate	Change
Payments to school funds (appropriation or estimate) .....	\$76,827	\$146,747	\$38,200	\$150,000	+\$111,800

Under provisions of the Act of June 20, 1910 (36 Stat. 562, 573) certain areas within National Forests were granted to the States for school purposes. The percentage that these lands are of the total National Forest area within the State is used in determining payments to the States. The receipts from all National Forest land within the State are used as the basis for applying the percentage. For example, if total receipts for the State are \$100,000 and if 10 percent of lands are in the "granted for school purposes" category, the payment to the State would be \$10,000. The amounts so paid are deducted from the net receipts before computing the 25 percent payments to States.

Change is due to estimated receipts for the twelve-month period in fiscal year 1977 over those estimated for the three-month period in the transition quarter.

1. The first part of the paper discusses the general situation of the East Asian library at the University of Chicago. It describes the collection, the staff, and the facilities. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

2. The second part of the paper discusses the library's collection. It describes the types of materials in the collection, the size of the collection, and the methods of acquisition. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

3. The third part of the paper discusses the library's staff. It describes the types of staff, the size of the staff, and the methods of recruitment. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

4. The fourth part of the paper discusses the library's facilities. It describes the types of facilities, the size of the facilities, and the methods of construction. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

5. The fifth part of the paper discusses the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL). It describes the types of participation, the size of the participation, and the methods of participation. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

6. The sixth part of the paper discusses the library's future plans. It describes the types of plans, the size of the plans, and the methods of implementation. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

7. The seventh part of the paper discusses the library's conclusion. It describes the types of conclusion, the size of the conclusion, and the methods of implementation. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

8. The eighth part of the paper discusses the library's bibliography. It describes the types of bibliography, the size of the bibliography, and the methods of implementation. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

9. The ninth part of the paper discusses the library's index. It describes the types of index, the size of the index, and the methods of implementation. It also mentions the library's participation in the International Association of Agricultural Librarians and Documentalists (IAALD) and the International Association of University Librarians (IAUL).

PAYMENTS TO STATES, NATIONAL FORESTS FUND  
(Permanent appropriation)  
(All operation and maintenance)

Appropriation, 1976 .....	\$87,793,908
Transition quarter .....	(109,523,445)
Appropriation, 1977 .....	48,946,378
Estimate, 1978 .....	189,120,000
Change .....	<u>+140,173,622</u>

PROJECT STATEMENT

Project	1976	Transition quarter	1977 estimate	1978 estimate	Change
Payments to States (appropriation or estimate) .....	\$87,793,908	\$109,523,445	\$48,946,378	\$189,120,000	+\$140,173,622

The Act of May 23, 1908, as amended (16 USC 500) requires, with a few exceptions, that 25 percent of all money received from the National Forests during any fiscal year be paid to the States in which the forests are located, for the benefit of public schools and public roads of the county or counties in which such National Forests are situated. The amount of this appropriation varies each year in direct proportion to National Forest receipts during the previous fiscal year.

The amounts set aside from receipts collected from the sale of National Forest timber, grazing, special use permits, power mineral leases, and admission and user fees, before the 25 percent is applied are listed below:

- (1) Payment to the State of Minnesota covering certain National Forest lands in Counties of Cook, Lake, and St. Louis situated within the Superior National Forest is made under the terms of the Act of June 22, 1948, as amended (16 USC 577c-577h). Receipts collected from the areas covered by this Act are excluded when the 25 percent payment to the State of Minnesota is computed.
- (2) For lands in certain counties in Utah, Nevada, and California, the States receive 25 percent of receipts only after funds, if made available by Congress, have been set aside for the acquisition of National Forest lands within the specified National Forests under the terms of special acts authorizing appropriations from forest receipts for this purpose.
- (3) Payments to the States of Arizona and New Mexico under the provisions of the Act of June 20, 1910 (36 Stat. 562, 573), of shares of the gross receipts from the National Forests in those States which are proportionate to the areas of land granted to the States for school purposes within the National Forests.

Change of \$140,173,622 is due to:

- (1) Estimated National Forests Fund receipts for the twelve-month period in fiscal year 1977 over those for the three-month period in the transition quarter, \$80,673,622.
- (2) Estimated additional payments required by the National Forest Management Act of 1976 (PL 94-588, October 22, 1976), \$59.5 million.



A-11-32a

STANDARD FORM 300-T  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised. Program

### PERMANENT APPROPRIATIONS

Program and Financing (in thousands of dollars)

300-101T









WORKING CAPITAL FUND  
(All capital investment)

The Working Capital Fund was established by the Act of August 3, 1956 (16 USC 579b), as amended by the Act of October 23, 1962 (16 USC 579b). It is a self-sustaining revolving fund which provides services to National Forests, Experiment Stations, and when necessary, to other Federal agencies, and as provided by law, to State and private agencies and persons who cooperate with the Forest Service in fire control and other authorized programs.

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>Change</u>
Permanent full-time man-years .....	560	570	660	+90

An increase of \$6,237,000 in program level is proposed in fiscal year 1978, together with an increase of 90 permanent full-time man-years. Total 1978 program level proposed is \$65,898,000.

The forestry-related supply and support services provided by the Working Capital Fund in fiscal year 1976 included:

Equipment service which owns, operates, maintains, replaces and repairs common use motor driven and similar equipment. This equipment is rented to administrative units, i.e., National Forests, Experiment Stations and other units, and in some cases to other agencies, at rates which recover the cost of operation, repair and maintenance, management, and depreciation. The rates also include an increment which provides additional cash which, when added to depreciation earnings and the residual value of equipment, provides sufficient funds to replace the equipment.

Aircraft service which operates, maintains, and repairs Forest Service owned aircraft used in fire surveillance and suppression and in other Forest Service programs. The aircraft are rented to National Forests, Experiment Stations, and in some cases to other agencies, at rates which recover the cost of depreciation, operation, maintenance, repair, and improvements in the airworthiness of the aircraft. Aircraft replacement costs are financed from either appropriated funds or the Forest Service Working Capital Fund, or a combination of both.

Supply service which operates the following common services:

Central Supply which procures, stores, and issues grass seed to National Forests, Experiment Stations, and others at prices which recover costs.

Photo reproduction laboratories which store, reproduce, and supply aerial photographs, aerial maps, and other photographs of National Forest lands. The photographic reproductions are sold to National Forests, Experiment Stations, and others at cost.

Sign shops which manufacture and supply special signs for the National Forests for use in regulating traffic and as information to the public and other users of the National Forests. The signs are sold to National Forests and Experiment Stations at cost.

Subsistence which prepares and serves meals to Forest Service crews working in areas where adequate public restaurant facilities are not available.

Cribbing which manufactures special concrete structural material used in embankments for erosion control purposes along access roads in the National Forests. This material is sold to National Forests at prices which recover costs.



Nurseries which operate forest tree nurseries and cold storage facilities for storage of tree and seed stock and a seed extractory. Tree seed is procured, cleaned, bagged, and stored in refrigerated facilities. Tree and seed stock is sold to National Forests, States, and other Federal agencies at cost.

Volume of Business for the Various Major Activities  
of the Working Capital Fund  
(In thousands of dollars)

<u>Service</u>	<u>1976</u>	<u>Transition quarter</u>	<u>1977 estimate</u>	<u>1978 estimate</u>
Equipment .....	41,469	14,600	51,348	54,458
Aircraft .....	1,671	688	1,922	2,035
Supply .....	2,526	913	2,509	2,259
Nursery .....	5,356	153	6,650	7,350
Total .....	51,022	16,354	62,429	66,102

The Working Capital Fund requires no cash appropriation. Initially, its assets were purchased by regular Forest Service appropriations and were donated to the fund.



## DEPARTMENT OF AGRICULTURE

A-11-32f

## FOREST SERVICE

## WORKING CAPITAL FUND

Type also:  
175M4/22

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

## Program and Financing (in thousands of dollars)

Identification code	1976 actual	1970 actual	1977 estimate	1978 estimate
12-4605-0-4-302				
<u>Program by activities:</u>				
Forestry related supply and support:				
Operating costs, funded ..	37,735	10,652	44,951	47,909
Capital outlay, funded ...	9,170	4,259	14,445	16,887
Total program costs, funded .....	46,905	14,911	59,396	64,796
Change in selected resources (undelivered orders)	1,429	4,079	265	1,102
10.00 Total obligations ....	48,334	18,990	59,661	65,898
<u>Financing:</u>				
Offsetting collections from:				
11.00 Federal funds:				
Revenue .....	-45,194	-14,609	-55,397	-58,703
Income provision for increased cost of equipment replacement .....	-5,174	-1,638	-6,566	-6,988
Unfilled customer's orders .....	-78	-180	-120	-136
14.00 Non-Federal sources:				
Proceeds from sale of equipment and other assets .....	-2,036	-326	-2,663	-2,955
21.00 Unobligated balance available, start of period .....	-2,899	-7,047	-4,810	-9,895
24.00 Unobligated balance available, end of period .....	7,047	4,810	9,895	12,779
<u>Budget authority ..</u>	.....	.....	.....	.....
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



## DEPARTMENT OF AGRICULTURE

A-11-32f

## FOREST SERVICE

## WORKING CAPITAL FUND

Type dno:  
170M4/22

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised Program and Financing (in thousands of dollars)--continued

Identification code 12-4605-0-4-302		10 76 actual	10 TQ actual	10 77 estimate	10 78 estimate
<u>Relation of obligations to outlays:</u>					
71.00	Obligations incurred, net .....	-4,148	2,237	-5,085	-2,884
72.00	Obligated balance, start of period ...	2,316	710	6,292	2,093
74.00	Obligated balance, end of period .....	-710	-6,292	-2,093	-8,578
90.00	Outlays .....	-2,542	-3,345	-886	-9,369
(Mono cast: 22.13)		(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





Type also:  
17a M4/22

**STANDARD FORM 304-T**  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised,  
504-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
WORKING CAPITAL FUND

A-11-34a

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-4605-0-4-302				
Personnel compensation:				
11.1 Permanent positions.....	8,517	2,103	9,149	10,625
11.3 Positions other than permanent.....	4,867	1,282	5,342	6,180
11.5 Other personnel compensation.....	579	203	635	700
11.8 Special personal services payments.....	37	-15	24	35
Total personnel compensation.....	14,000	3,573	15,150	17,540
Personnel benefits:				
12.1 Civilian.....	1,355	362	1,479	1,720
13.0 Benefits for former personnel.....	2	2	.....	.....
21.0 Travel and transportation of persons.....	372	102	398	435
22.0 Transportation of things ..	380	89	418	550
Rent, communications, and utilities:				
23.1 Standard level user charges	32	13	75	120
23.2 Other rent, communications, and utilities .....	851	152	880	1,200
24.0 Printing and reproduction.....	16	17	21	25
25.0 Other services.....	5,426	2,933	8,759	7,647
26.0 Supplies and materials.....	14,976	6,686	18,964	21,200
31.0 Equipment.....	10,941	5,045	13,534	15,475
32.0 Lands and structures.....	14	26	15	25
33.0 Investments and loans.....				
41.0 Grants, subsidies, and contributions.....	4	3	3	5
42.0 Insurance claims and indemnities.....	1	2	1	1
43.0 Interest and dividends.....				
44.0 Refunds.....	4	.....	4	5
Subtotal .....	48,374	19,005	59,701	65,948
95.0 Quarters and subsistence charges .....	-40	-15	-40	-50
99.0 Total obligations.....	48,334	18,990	59,661	65,898

(Mono cast: 22.18)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5.9)

(Mono cast: 5)



FOREST SERVICE  
WORKING CAPITAL FUND

Type also:  
178 MG/22

**STANDARD FORM 300-T**  
June 1973, Office of Management and Budget  
Circular No. A-11, Revised.

## Personnel Summary

<b>Personnel Summary</b>				
<b>Identification code</b>	<b>1976 actual</b>	<b>1977 estimate</b>	<b>1978 estimate</b>	
12-4605-0-4-302				
Total number of permanent positions .....	694		646	736
Full-time equivalent of other positions .....	477		487	562
Average paid employment .....	1,056		1,359	1,593
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)







## COOPERATIVE WORK, FOREST SERVICE (TRUST FUND)

Contributions are received from cooperators, including counties, States, timber sale operators, individuals, and associations, and are expended by the Forest Service in accordance with the terms of the applicable cooperative agreements. The work consists of protection and improvement of the National Forests, work performed for National Forest users, and forest investigations and protection, reforestation, and administration of private forest lands.

The major programs conducted under this account are described below in terms of the projects reflected in the statement at the end of this section.

- (1) Construction and Maintenance of Roads and Trails, and
- (2) Construction and Maintenance of Other Improvements.

Under the Acts of June 30, 1914 (16 USC 498) and March 3, 1925, April 24, 1950 (16 USC 572) and October 13, 1964 (16 USC 537), deposits for cooperative work are accepted from State and local government agencies, associations, Federal timber purchasers, users of roads, and others for the construction and maintenance of roads, trails, and other improvements and for performing work which is the National Forest users' responsibility, this method of performance of the work being of mutual benefit or of benefit to the public at large. Cooperative deposits received for wildlife habitat improvement for States from their hunting and fishing fees are included in this activity.

- (3) Protection of National Forest and Adjacent Non-Federal Lands. The Act of June 30, 1914 (16 USC 498) authorizes the acceptance of contributions for the protection of the National Forests and the Act of March 3, 1925, as amended by Section 5, Act of April 24, 1950 (16 USC 572), authorizes the acceptance of deposits for the protection of non-Federal lands in or near the National Forests. The arrangement for the protection of private lands from fire helps both parties since there are millions of acres of non-Federal forest land intermingled with Federal ownership on the National Forests. The lands in non-Federal ownership are usually in small tracts. It would be uneconomical for the owner to set up a fire control organization for the protection of his land. The advantage to the Government is that in many cases it would be necessary to suppress the fires on the non-Federal land without reimbursement in order to protect the adjoining Federal land.
- (4) Sale Area Betterment (including reforestation). Section 3 of the Act of June 9, 1930 (16 USC 576b) provides for deposits of funds by timber sale purchasers to cover the cost of reforestation and special cultural measures to improve the future stand of timber on the areas cutover by the purchaser. Accomplishments under this program are reported under the Forest land management subappropriation along with accomplishments for reforestation and stand improvement for that subappropriation.
- (5) Scaling. Under provisions of the Act of April 24, 1950 (16 USC 572) and of Section 210 of the Act of September 21, 1944 (16 USC 572a), acceptance of deposits from timber purchasers for cooperative scaling service is authorized. Such arrangements are established only when requested by the operator and when the operator pays the extra cost of such services, either in advance or through reimbursement under appropriate payment guarantees.
- (6) Research Investigations. The Acts of June 30, 1914 (16 USC 498) and May 22, 1928 (16 USC 581i-1) authorize the acceptance of deposits for forestry research. Deposits are received from State and other public agencies, and from industrial, association, and other private agencies to finance research projects of mutual interest and benefit to both parties. The deposits may be made either in a single sum or on a continuing basis, and may either partially or wholly cover the cost of the research. The cooperative research projects may involve any aspect of forestry and vary widely as to scope and duration.





A very common example of such cooperation is for a State to make a deposit to the Cooperative work fund in order to intensify or to speed up completion of a comprehensive survey of the forest resources of the State. Other examples are State contributions toward forest fire research. The results of such cooperative investigations are made available to the general public as well as to the depositor.

- (7) Administration of Non-Federal Lands. The Act of March 3, 1925, as amended by Section 5, Act of April 24, 1950 (16 USC 572) authorizes the acceptance of deposits for the administration of non-Federal lands. These deposits are made by non-Federal owners having land intermingled with or adjacent to National Forests who wish these lands managed in accordance with good forest management practices. Their holdings are usually too small to warrant the employment of professional foresters to administer such tracts. The advantages to the Government include the avoidance of possible high fire hazard areas resulting from improper cutting practices, the elimination of the necessity of precisely marking the boundaries of the private land, and additional private forest land handled under proper forest practices.
- (8) Reforestation (private lands). The Act of March 3, 1925, as amended by Section 5, Act of April 24, 1950 (16 USC 572) authorizes the acceptance of deposits for reforestation of non-Federal lands situated within or near a National Forest. This work is limited to areas of non-Federal land within a planting project on the National Forests or to areas in which certain civic and other public-spirited organizations have taken an interest.
- (9) Statement of Utilization of Funds. Following is a statement of funds received and obligated and balances available by major activities:



COOPERATIVE WORK, FOREST SERVICE--Trust Fund

Project	Actual Fiscal Year 1976		Actual Transition Quarter		Estimate Fiscal Year 1977		Estimate Fiscal Year 1978	
	Balance Available June 30, 1975:	Funds Received:	Obligations: Balance:	Funds Received:	Obligations: Balance:	Funds Received:	Obligations: Balance:	
1. Construction and maintenance of roads and trails	\$11,040,519:	\$10,564,907:	\$8,404,289:	\$13,201,137:	\$3,770,708:	\$2,490,917:	\$14,480,928:	
2. Construction and maintenance of other improvements:	1,110,166:	1,392,313:	1,524,816:	977,663:	334,212:	233,080:	1,078,795:	
3. Protection on National Forests and adjacent lands:								
(a) Fire .....	682,889:	2,502,125:	2,541,205:	643,809:	1,657,266:	997,946:	1,303,129:	
(b) Other .....	3,163,560:	3,301,083:	2,882,866:	3,581,777:	1,044,205:	730,647:	3,895,335:	
4. Sale area betterment on National Forest lands (including reforestation) .....	73,958,756:	53,797,548:	46,407,394:	81,348,910:	17,067,576:	9,193,644:	89,222,842:	
5. Scaling of timber	276,772:	1,456,441:	1,556,776:	176,437:	432,141:	312,651:	295,927:	
6. Research investigations .....	808,986:	904,510:	891,571:	821,925:	425,096:	139,589:	1,107,432:	
7. Administration of private lands ...	31,702:	60,142:	53,140:	38,704:	144,558:	10,641:	172,621:	
8. Reforestation (private lands) ..	83,969:	21,824:	20,479:	85,314:	4,560:	4,237:	85,637:	
9. Service for foreign governments .....	2,218:	3,565:	5,783:	-	-	-	-	
10. Land acquisition, Cache National Forest .....	-	13,000:	-	-	-	-	-	
Total .....	91,159,537:	74,017,458:	64,301,319:	100,875,676:	24,880,322:	14,113,352:	111,642,646:	
Capital investment ..	75,162,810:	55,212,942:	47,659,969:	82,715,783:	17,614,468:	9,538,024:	90,792,227:	
Operation and maintenance .....	15,996,727:	18,804,516:	16,641,350:	18,159,893:	7,265,854:	4,575,328:	20,850,419:	
Total .....	91,159,537:	74,017,458:	64,301,319:	100,875,676:	24,880,322:	14,113,352:	111,642,646:	

NOTE: Balances carried forward are due primarily to necessity of deferring work for which funds are available until the most practicable time for accomplishment. For instance, funds for sale area betterment are received in advance of timber cutting, but work cannot be started until cutting operations are completed. The time lag sometimes extends for several years, depending on the amount of preparatory work required in the sale area and weather conditions.

NOTE: Balances carried forward are due primarily to necessity of deferring work for which funds are deposited until the most practicable time for accomplishment. For instance, funds for sale area betterment are received in advance of timber cutting, but work cannot be started until cutting operations are completed. The time lag sometimes extends for several years, depending on the amount of preparatory work required in the sale area and weather conditions.

Above obligations include refunds to cooperators as follows: 1976, \$213,874; Transition Quarter, \$25,164.

	1976	1977	1978
Permanent full-time man-years .....	1,223	1,240	1,240



DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
COOPERATIVE WORK (TRUST FUND)

A-11-32a

Type class:  
170MA/22

STANDARD FORM **300-7**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Program and Financing (in thousands of dollars)

Identification code	1976 actual	1977 actual	1977 estimate	1978 estimate
12-8028-0-7-302				
Program by activities:				
1. Construction and main- tenance of roads and trails .....	8,406	2,868	10,885	10,553
2. Construction and main- tenance of other improvements .....	1,404	308	1,642	1,340
3. Protection of national forest and adjacent private land .....	5,469	1,527	6,230	5,240
4. Sale area betterment and scaling .....	47,312	10,670	52,570	56,978
5. Research investigations	886	145	820	800
6. Administration ....	78	14	50	50
7. Reforestation .....	19	4	15	20
Total program costs, funded 1/ .....	63,574	15,536	72,212	74,981
Change in selected resources (undelivered orders) .....	727	-1,423	3,300	.....
10.00 Total obligations ...	64,301	14,113	75,512	74,981
Financing:				
21.00 Unobligated balance avail- able, start of period	-91,160	-100,876	-111,643	-114,731
24.00 Unobligated balance avail- able, end of period ..	100,876	111,643	114,731	134,250
60.00 Budget authority (appro- priation) (permanent, indefinite) .....	74,017	24,880	78,600	94,500
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)



Type des:  
176MA/22

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
COOPERATIVE WORK (TRUST FUND)

A-11-32a

STANDARD FORM 300-T

June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Program and Financing (in thousands of dollars)--continued

Identification code 12-8028-0-7-302		19 76 actual	19 TQ actual	1977 estimate	19 78 estimate
<u>Relation of obligations to outlays:</u>					
71.00	Obligations incurred, net	64,301	14,113	75,512	74,981
72.00	Obligated balance, start of period .....	2,890	-47,054	-49,287	14,825
74.00	Obligated balance, end of period .....	47,054	49,287	-14,825	-14,806
90.00	Outlays .....	114,245	16,346	11,400	75,000
1/ Includes capital outlay as follows: 1976, \$1,529 thousand; Transition Quarter, \$889 thousand; 1977, \$2,000 thousand; 1978, \$2,500 thousand.					
(Mono cast: 22.13)		(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





Type size:  
17x 14/22

STANDARD FORM 304-T  
June 1976, Office of Management and Budget  
Circular No. A-11, Revised.  
304-1037

DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
COOPERATIVE WORK (TRUST FUND)

A-11-34a

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 76 actual	19 TQ actual	19 77 estimate	19 78 estimate
12-8028-0-7-302				
Personnel compensation:				
11.1 Permanent positions.....	18,322	3,220	21,017	21,034
11.3 Positions other than permanent.....	13,373	3,467	15,483	15,587
11.5 Other personnel compensation.....	1,112	296	1,241	1,300
11.8 Special personal services payments.....	1	1	.....	.....
Total personnel compensation.....	32,808	6,984	37,741	37,921
Personnel benefits:				
12.1 Civilian.....	3,284	667	3,887	3,905
<del>13.0 Benefits for former personnel.....</del>				
21.0 Travel and transportation of persons.....	735	183	874	875
22.0 Transportation of things .. Rent, communications, and utilities:	2,714	806	3,104	3,200
23.1 Standard level user charges	645	182	950	1,283
23.2 Other rent, communications, and utilities .....	1,190	206	1,171	1,400
24.0 Printing and reproduction.....	66	41	94	75
25.0 Other services.....	10,251	2,243	13,118	11,592
26.0 Supplies and materials.....	5,771	1,286	6,609	6,760
31.0 Equipment.....	813	522	976	950
32.0 Lands and structures.....	5,826	1,041	6,820	6,825
33.0 Investments and loans.....	1	.....	1	.....
<del>41.0 Grants, subsidies, and contributions.....</del>				
42.0 Insurance claims and indemnities.....	18	2	13	20
<del>43.0 Interest and dividends.....</del>				
44.0 Refunds.....	393	.....	381	400
Subtotal .....	64,515	14,163	75,739	75,206
95.0 Quarters and subsistence charges .....	-214	-50	-227	-225
99.0 Total obligations.....	64,301	14,113	75,512	74,981
(Mono cast: 22.18)	(Mono cast: 8.9)	(Mono cast: 8.9)	(Mono cast: 8.9)	(Mono cast: 8)



## FOREST SERVICE

COOPERATIVE WORK (TRUST FUND)

## Personnel Summary

Type size:  
178M6/22

**STANDARD FORM 300-T**  
June 1975, Office of Management and Budget  
Circular No. A-11, Revised.

Identification code 12-8028-0-7-302	1976 actual	19 TQ	1977 estimate	1978 estimate
Total number of permanent positions .....	1,455		1,451	1,451
Full-time equivalent of other positions .....	1,535		1,564	1,564
Average paid employment .....	2,810		3,604	3,656
Average GS grade .....	8.74		8.74	8.74
Average GS salary .....	\$16,084		\$16,905	\$16,905
Average salary of ungraded positions .....	\$12,000		\$12,199	\$12,199
(Mono cast: 22.13)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5.9)	(Mono cast: 5)





